PEACE/WILLISTON
FISH & WILDLIFE
COMPENSATION
PROGRAM

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Omineca Biophysical Mapping Project: Maps and Legend

E. McKenzie
March 1993

PWFWCP Report No. 24

The Peace/Williston Fish & Wildlife Compensation Program is a cooperative venture of BC Hydro and the provincial fish and wildlife management agencies, supported by funding from BC Hydro. The Program was established to enhance and protect fish and wildlife resources affected by the construction of the W.A.C. Bennett and Peace Canyon dams on the Peace River, and the subsequent creation of the Williston and Dinosaur Reservoirs.

Peace/Williston Fish and Wildlife Compensation Program, 1011 Fourth Ave. 3rd Floor, Prince George B.C. V2L 3H9

Website: *www.bchydro.bc.ca/environment/initiatives/pwcp/*

This report has been approved by the Peace/Williston Fish and Wildlife Compensation Program Fish Technical Committee.

Citation: E. McKenzie. March 1993. Omineca biophysical mapping project: Maps and legend. Peace/Williston Fish and Wildlife Compensation Program, Report No. 24. 125pp.

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OMINECA BIOPHYSICAL MAP LEGEND

INTRODUCTION

During the summer of 1992, a biophysical inventory was implemented in the Omineca River area east of Williston Lake. The study area is covered by N.T.S, map sheets 93N/8,9,10,11 (north half), 14 (south half), 15,16 and is described in the following section.

Working as a team, Larry Lacelle (Wildlife Branch, Ministry of Environment. Victoria), Rod Backmeyer (Diversified Environmental Services, Fort St. John) and Evan McKenzie (J.M.J. Holdings Inc., Nelson) sampled 126 sites with 92 full plots and 34 reconnaissance-level plots. At each site, information on environmental features, terrain, soil, vegetation and wildlife use was recorded. Site data, in conjunction with existing information and air photo interpretation, were used to describe and map terrain and biophysical habitat units for the study area. Wildlife use is correlated to the various habitat units.

The Omineca Mapping Project was co-funded by the Williston Wildlife Compensation Fund and Fletcher Challenge Canada Ltd., Woodland Division, MacKenzie. The project was also supported by the B.C. Ministry of Environment through manpower and logistic contributions.

BIOPHYSICAL AND BIOGEOCLIMATIC SETTING

The mapping shows biophysical habitat units within an ecoregion and biogeoclimatic framework. Following the ecological land classification hierarchy set forth in Demarchi et al (1990), the Omineca River study area is located within the Humid Temperate Ecodomain, the Humid Continental Highlands Ecodivision, the Sub-Boreal Interior Ecoprovince, the Skeena and Omineca Mountains Ecoregion and within three ecosections including the Parsnip Trench, the Southern Omineca Mountains and the Manson Plateau. (Demarchi, 1993.)

Significant physiographic features in the study area include the Wolverine and Germansen Ranges, Manson Lakes and River, Germansen Lake and River and the Omineca River drainage.

As part of the Sub-Boreal Interior Ecoprovince, the dominant vegetation in the ecosections is dense coniferous forests of spruce and subalpine fir with lodgepole pine dominating in seral stands and on dry sites. Deciduous forests are also common at lower elevations. The area contains extensive areas of non-forested alpine tundra at high elevations and scattered wetland complexes.

Moose is the most abundant and widely distributed ungulate in the ecosections of the study area. Black bear and wolf are common throughout and grizzly bear are abundant in moist to wet forests of the mountains. High elevation alpine habitats are important for caribou and mountain goat.

BIOGEOCLIMATIC UNITS

Within the Ministry of Forests Biogeoclimatic ecosystem classification (BEC) system (Meidinger and Pojar, 1991), the study area includes seven biogeoclimatic units. Biogeoclimatic information and unit boundaries have been modified after MacKinnon et al (1990) and Delong et al (1987). The seven units are described as follows.

BWBS dk1 - The Boreal White and Black Spruce Zone, Dry Cool Subzone, Stikine Variant is a lowland to montane subzone occurring in the main valleys of the Omineca Mountains below elevations of 1000m on north aspects and 1200m on warm exposures. The subzone is climatically dry and has an extensive fire history. Climax forests have canopies of hybrid white spruce and lodgepole pine, with black spruce sometimes occurring on uplands sites. Black spruce bogs are also locally common in this subzone. Lodgepole pine and trembling aspen form extensive seral stands. Typically early successional understory species include willows, prickly rose and fireweed. Common shrubs and herbs in climax stands include soopolallie, highbush-cranberry, bunchberry, twinflower, tall bluebells and palmate colt's-foot. Feathermosses are usually dominant in late successional forests.

Riparian habitats in this subzone provide important moose winter range and support a variety of other wildlife species. Mature stands of pine and spruce with dense arboreal and terrestrial lichens (on dry sites) are used by caribou in the winter.

SBS - The Sub-Boreal Spruce Zone within the study area includes three variants that occur in valleys and on lower mountain slopes east of the BWBSdkl unit and along the flat shores west of Williston Lake. The SBS variants occur below elevations of approximately 1050m on gentle terrain, 1200 on warm exposures and 1000m on cool aspects. Climax forests are dominated by hybrid white spruce and subalpine fir with lodgepole pine on dry sites or on some upland sites with black spruce.

SBSmk1 - The Sub-Boreal Spruce Zone, Moist Cool Subzone, Mossvale Variant occurs in the southeast part of the study area within valleys of the Manson River drainage.

Dominant seral species include lodgepole pine, trembling aspen, Sitka alder, willows and fireweed. Characteristic understory species in climax stands are Sitka alder, black huckleberry, bunchberry, twinflower and feathermosses. Moist and wet site indicators include alders, black twinberry, devil's club, oak fern and horsetails.

Lichens are dominant on very dry sites.

Riparian habitats and low elevation upland sites provide winter range for ungulates in this unit. Upland sites may provide berry and herbaceous forage for bear.

SBSmk2 - The Sub-Boreal Spruce Zone, Moist Cool Subzone, Williston Variant occurs on the flat shores east of the Williston Reservoir within the Omineca River study area. Characteristic seral species in this unit are similar to those of the SBSmk1 with the exception that paper birch can be an associate species. Common understory species in late successional stands are highbush-cranberry, prickly rose, bunchberry, twinflower and feathermosses. Moist-wet and very dry site indicators are similar to those of the SBSmk1 unit. This variant also has extensive stands of lodgepole pine black spruce occurring on fine-textured, moderately to imperfectly-drained, glaciolacustrine deposits in the vicinity of Williston Lake.

The extensive lowland habitat along the Williston Reservoir supports small populations of wintering moose as well as caribou, black bear and many species of furbearers.

SBSwk2 - The Sub-Boreal Spruce Zone, Wet Cool Subzone, Finlay - Peace Variant occurs on gentle terrain and lower mountain slopes west of the SBSmk2 variant. The climate is wetter and cooler than the other two SBS variants in the study area and consequently the unit has oak fern as the dominant herb on mesic sites and devil's club is more common in this variant. Early successional species are similar to those of the SBSmk2 with paper birch often being dominant in this unit. Other characteristic species on submesic to moist sites in climax stands include Sitka alder, black huckleberry, highbush-cranberry, bunchberry and wild sarsaparilla. Feathermosses are dominant in most forested ecosystems. The variant provides summer habitat for ungulates and bear and early fall habitat for caribou.

ESSFmv3 - The Engelmann Spruce - Subalpine Fir Zone, Moist Very Cool Subzone, Omineca Variant occurs above the BWBSdk1 and SBS variants (> 1000-1200m) and below the ESSFmvp3 (parkland) and Alpine Tundra. Climax forests have canopies of Engelmann Spruce and subalpine fir. Lodgepole pine and fireweed are common seral species. In the shrub layer, white-flowered rhododendron, black huckleberry, Sitka alder and oval-leaved blueberry are characteristic over a wide range of sites and in all successional stages. Five-leaved bramble and bunchberry are common herbs on submesic to mesic sites while Sitka valerian and three-leaved foamflower are moist site indicators.

Subalpine forests provide habitat for a variety of wildlife including caribou, bear, furbearers, spruce grouse and owls. Moist sites such as avalanche tracks, meadows and sedge wetlands are also used by moose, black and grizzly bear.

ESSFmvp3 - The Engelmann Spruce - Subalpine Fir Zone, Moist Very Cool Subzone, Omineca parkland variant occurs above the ESSmv3 and below the Alpine Tundra between elevations of 1500 to 1750m. The parkland is a transitional zone between closed canopy subalpine forests and the non-forested subalpine tundra. It includes a mosaic of clumps of stunted subalpine fir and Engelmann Spruce and openings dominated by dwarf shrubs or herbs. There is little successional variation from shrub-herb to forested successional phases in this zone. Dry to mesic sites are dominated by white-mountain heather, crowberry and lichens. Moist subalpine meadows and sedge wetlands provide important summer forage for black bear and grizzly bear.

ATn - The Alpine Tundra Zone, Northern Subzone is a treeless unit occurring above approximately 1600m in the study area. It includes krummholz and willow or scrub birch thicket habitats at lower elevations and tundra ecosystems at higher elevations. The krummholz habitat consists of a continuous cover of low (<3m) subalpine fir in a mosaic with alpine meadows and tundra. Characteristic alpine species include Altai fescue, mountain sage, dwarf willows, moss campion, sedge and lichens.

Terrestrial lichens on rounded, windswept ridges in the alpine tundra zone provide important winter forage for caribou. Moist, herbaceous meadows are used by caribou, grizzly bear, willow ptarmigan and hoary marmot while mountain goat utilize steep, rugged vegetated alpine terrain.

BIOPHYSICAL HABITAT MAPPING METHODOLOGY

Data collection, legend development and habitat mapping follow the methods set forth in Demarchi et al (1990).

HABITAT CLASS DERIVATION

Habitat units were derived by the following method:

1. review of information on existing biophysical habitat units defined by Clement (1990) for the Ospika River Drainage, which occurs north of the study area on the east side of Williston Lake and in the same ecoprovince as the Omineca River area

2. field sampling of vegetation, soils, site and wildlife utilization of a range of site types defined by terrain, aspect, disturbance history, seral stage and potential importance to ungulates and grizzly bear that use the study area as habitat or potential habitat

3. summarization of the above data by similarities in terrain, soil moisture regime, directional exposure and seral stage

4. comparison with already defined habitat units and BEC site series

5. naming of units consistent with already defined habitat units where possible, naming of units consistent with existing BEC site series where possible and naming of units which do not fit into either of the above

6. habitat unit description by seral stage through summarization of environmental features and the listing of dominant and associated vegetation, ungulate forage and grizzly bear forage

HABITAT UNIT MAPPING

Air photos at a scale of 1:70,000 were used to identify habitat units based upon the biophysical units described in the legend and terrain units previously delineated by the terrain specialist. Habitat unit boundaries were delineated on mylar film at a scale of 1:50,000 within the framework of the terrain unit boundaries. Seral stages were derived using forest cover maps and stand age information collected in the field at various sample plots. Map symbols used to identify habitat units were derived by following the methods described in Demarchi (1990).

SERAL STAGE DEFINITIONS FOR THE OMINECA RIVER BIOPHYSICAL

Seral Stages were classified using the system described in Hamilton (1987).
1 - shrub-herb
2 - pole-sapling
3 - young forest
4 - mature forest
5 - old-growth

OMINECA BIOPHYSICAL MAP LEGEND

NON-FORESTED HABITAT UNITS

OW - shallow open water
LA - lake
RO - rock outcrop (non-vegetated)
TA - talus (non-vegetated)
MI - anthropogenic (placer mining) deposits
CU - cultivated

OMINECA BIOPHYSICAL MAP LEGEND

	OMINECA BIOPHYSICAL McKenzie 1993		OSPIKA BIOPHYSICAL Clement 1990		B.C. FOREST SERVICE. PRINCE GEORGE MacKinnon et al 1990
pg-#	MAP SYMBOL	HABITAT CLASS	MAP SYMBOL	HABITAT CLASS	BWBSdk1 SITE SERIES
1	SM SMf SMs	Spruce - moss mesic Spruce - moss fine-textured soil Spruce - moss shallow soil	SM	Spruce - moss mesic	01 Sw - Knight's plume - Step moss, (03 Sw - Wildrye - Toad-flax, 05 Sw - Soopolallie -Twinflower)
3	SMc	Spruce - *moss* mesic cool aspect	SMc	Spruce - moss mesic cool aspect	01 Sw - Knight's plume - Step moss, (03 Sw - Wildrye - Toad-flax)
5	RK	Prickly rose - kinnikinnick warm aspect, coarse-textured soil			(02 Pl - Lingonberry - Feathermoss]
7	PLc	Lodgepole pine - lichen coarse-textured soil, cool aspect			02 Pl - Lingonberry - Feathermoss
8	PLt	Lodgepole pine - lichen coarse-textured soil, terrace			02 Pl - Lingonberry - Feathermoss
9	AS ASs	Trembling aspen - soopolallie warm aspect Trembling aspen - soopolallie warm aspect, shallow soil			01 Sw - Knight's plume - Step Moss, (03 Sw - Wildrye - Toad-flax)
11	BL	Black spruce - lingonberry poor nutrient soil			04 Sb - Lingonberry - Knight's plume 07 Sb - Lingonberry - Coltsfoot
13	WBc	Willow - bluejoint avalanche chute, cool aspect			
14	WBw	Willow - bluejoint avalanche chute, warm aspect			
15	SF	Spruce floodplain			08 Sw - Currant - Horsetail
17	SH	Spruce - horsetail moist	SH	Spruce - horsetail moist	08 Sw - Currant - Horsetail
19	BP	Black spruce - peat moss bog			09 Sb - Horsetail - Sphagnum
20	SE	Sedge wetland	SE	Sedge-wetland	
vii	ROw[1]	Rock outcrop warm aspect	RTw	Rock/talus warm aspect	
vii	TAw[1]	Talus warm aspect	RTw	Rock/talus warm aspect	

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pg. #	MAP SYMBOL	HABITAT CLASS	MAP SYMBOL	HABITAT CLASS	SBSmk1 SITE SERIES
22	SB SBs	Spruce - bunchberry mesic Spruce - bunchberry shallow soil			01 Bunchberry - Moss
24	SBc	Spruce - bunchberry mesic cool aspect			01 Bunchberry - Moss
26	RK	Prickly rose - kinnikinnick warm aspect, coarse-textured soil			(02 Soopolallie - lichen)
28	PLc	Lodgepole pine - lichen coarse-textured soil, cool aspect			02 Soopolallie - lichen
29	PLt	Lodgepole pine - lichen coarse-textured soil, terrace			03 Kinnikinnick - Feather Moss
30	SS SSs	Spruce - soopolallie warm aspect Spruce - soopolallie warm aspect, shallow soil			01 Bunchberry - Moss, 05 Ricegrass - Moss
32	BB	Black spruce - dwarf blueberry poor nutrient soil			6.1 Pine - Black Spruce - Dwarf Blueberry (6.2 Pine - Black Spruce - Oak Fern)
34	WBc	Willow - bluejoint avalanche chute, cool aspect			
35	WBw	Willow - bluejoint avalanche chute, warm aspect			
36	AO	Alder - oak fern moist			07 Highbush-cranberry - Oak Fern 08 Devil's Club - Lady Fern
38	SF	Spruce floodplain			09.1 Spruce - Horsetail - Red-osier Dogwood
40	SH	Spruce - horsetail moist			(09.1 Spruce - Horsetail - Red-osier Dogwood) 09.2 Spruce - Horsetail - Step Moss
42	BP	Black spruce - peat moss bog			10 Bogs
43	SE	Sedge wetland			
vii	RO[1] ROw[1]	Rock outcrop Rock outcrop warm aspect			

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pg. #	MAP SYMBOL	HABITAT CLASS	MAP SYMBOL	HABITAT CLASS	SBSmk1 SITE SERIES
22	SB SBs	Spruce - bunchberry mesic Spruce - bunchberry shallow soil			01 Bunchberry - Moss
24	SBc	Spruce - bunchberry mesic cool aspect			01 Bunchberry - Moss
26	RK	Prickly rose - kinnikinnick warm aspect, coarse-textured soil			(02 Soopolallie - lichen)
28	PLc	Lodgepole pine - lichen coarse-textured soil, cool aspect			02 Soopolallie - lichen
29	PLt	Lodgepole pine - lichen coarse-textured soil, terrace			03 Kinnikinnick - Feather Moss
30	SS SSs	Spruce - soopolallie warm aspect Spruce - soopolallie warm aspect, shallow soil			01 Bunchberry - Moss, 05 Ricegrass - Moss
32	BB	Black spruce - dwarf blueberry poor nutrient soil			6.1 Pine - Black Spruce - Dwarf Blueberry (6.2 Pine - Black Spruce - Oak Fern)
34	WBc	Willow - bluejoint avalanche chute, cool aspect			
35	WBw	Willow - bluejoint avalanche chute, warm aspect			
36	AO	Alder - oak fern moist			07 Highbush-cranberry - Oak Fern 08 Devil's Club - Lady Fern
38	SF	Spruce floodplain			09.1 Spruce - Horsetail - Red-osier Dogwood
40	SH	Spruce - horsetail moist			(09.1 Spruce - Horsetail - Red-osier Dogwood) 09.2 Spruce - Horsetail - Step Moss
42	BP	Black spruce - peat moss bog			10 Bogs
43	SE	Sedge wetland			
vii	RO[1] ROw[1]	Rock outcrop Rock outcrop warm aspect			

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pg. #	MAP SYMBOL	HABITAT CLASS	MAP SYMBOL	HABITAT CLASS	SBSmk2 SITE SERIES
45	SB SBf	Spruce - bunchberry mesic Spruce - bunchberry fine-textured soil	SB	Spruce - bunchberry mesic	01 Sxw - Huckleberry - Highbush-cranberry, 03 Sxw - Huckleberry - Soopolallie 01 Sxw - Huckleberry - Highbush-cranberry
47	SBc	Spruce - bunchberry mesic cool aspect	SB	Spruce - bunchberry mesic	01 Sxw - Huckleberry - Highbush-cranberry 03 Sxw - Huckleberry - Soopolallie
49	RK	Prickly rose - kinnikinnick warm aspect, coarse- textured soil	JK	Juniper - kinnikinnick warm aspect, coarse-textured	
51	PLt	Lodgepole pine - lichen coarse-textured soil, terrace			02 Pl - Feathermoss - Cladina
52	SS	Spruce - soopolallie warm aspect	SS	Spruce - soopolallie warm aspect	03 Sxw - Huckleberry - Soopolallie 01 Sxw - Huckleberry - Highbush-cranberry
54	BS BSf	Black spruce - birch-leaved spirea poor nutrient soil Black spruce - birch-leaved spirea fine-textured soil	BL	Black spruce - Labrador tea depression	04 Sb - Huckleberry - Spirea
56	DO	devil's club - oak fern moist			05 Sxw - Oak Fern
58	SF	Spruce floodplain	SF	Spruce floodplain	06 Sxw - Horsetail
60	SH	Spruce - horsetail moist	SH	Spruce - horsetail moist	06 Sxw - Horsetail
62	BP	Black spruce - peat moss bog	BP	Black spruce - peat moss bog	
63	SE	Sedge wetland	SE	Sedge wetland	

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Pg #	MAP SYMBOL	HABITAT CLASS	MAP SYMBOL	HABITAT CLASS	SBSwk2 SITE SERIES
65	SO	Spruce - oak fern mesic	SO	Spruce - oak fern mesic	01 Sxw - Oak fern (03 Sxw - Huckleberry - Highbush-cranberry)
67	SOc	Spruce - oak fern mesic cool aspect	SO	Spruce - oak fern mesic	01 Sxw - Oak fern (03 Sxw - Huckleberry - Highbush-cranberry)
69	RK	Prickly rose - kinnikinnick warm aspect, coarse-textured soil	PL	Lodgepole pine - lichen warm aspect, shallow soil	
71	PLc	Lodgepole pine - lichen coarse-textured soil, cool aspect			
72	PLt	Lodgepole pine - lichen coarse-textured soil, terrace			02 R - Huckleberry - Cladina
73	PH	Lodgepole pine - black huckleberry warm aspect	PH	Lodgepole pine - black huckleberry warm aspect	03 Sxw - Huckleberry - Highbush-cranberry (01 Sxw - Oak fern)
75	BH	Black spruce - black huckleberry poor nutrient soil			04 Sb - Huckleberry - Clubmoss
76	WBc	Willow - bluegrass avalanche chute, cool aspect	WBc	Willow - bluejoint avalanche chute cool aspect	
77	WBw	Willow - bluegrass avalanche chute, warm aspect	WBw	Willow - bluejoint avalanche chute warm aspect	
78	SD	Spruce - devil's club moist	SD	Spruce - devil's club moist	05 Sxw - Devil's club
80	SF	Spruce floodplain			06 Sxw - Horsetail
82	SH	Spruce horsetail moist			06 Sxw - Horsetail
84	BP	Black spruce - peat moss bog			
85	SE	Sedge wetland	SE	Sedge wetland	

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PC#	MAP SYMBOL	HABITAT CLASS	MAP SYMBOL	HABITAT CLASS	ESSFmv3 SITE SERIES
87	FB FBs	Subalpine fir - five-leaved bramble mesic Subalpine fir - five-leaved bramble shallow soil			01 BI - Rhododendron - Feathermoss
89	FBc	Subalpine fir - five-leaved bramble mesic cool aspect	FB	Subalpine fir - five-leaved bramble mesic, cool aspect	01 BI - Rhododendron - Feathermoss
91	JK	Juniper - kinnikinnick warm aspect, coarse-textured soil			
93	FC	Subalpine fir - crowberry shedding	FC	Subalpine fir - crowberry ridge	02 BIPl - Crowberry - Cladina
95	FCc	Subalpine fir - crowberry shedding cool aspect			02 BIPl - Crowberry - Cladina
97	FCw	Subalpine fir - crowberry shedding warm aspect			02 BIPl - Crowberry - Cladina
99	LF	Lichen - Altai fescue grassland			
100	PCl	Lodgepole pine - Cladina lichen coarse-textured soil, terrace			02 BIPl - Crowberry - Cladina
101	FH FHs	Subalpine fir - huckleberry warm aspect Subalpine fir - huckleberry warm aspect, shallow soil	FH	Subalpine fir - black huckleberry warm aspect	01 BI - Rhododendron - Feathermoss
102	BT	Black spruce - Labrador tea poor nutrient soil			03 BISb - Labrador tea
103	WCc	Willow - cow-parsnip avalanche chute, cool aspect	WBc	Willow - bluejoint avalanche chute cool aspect	
104	WCw	Willow - cow-parsnip avalanche chute, warm aspect	WBc	Willow - bluejoint avalanche chute warm aspect	
105	FO	Subalpine fir - oak fern moist			04 BI - Oak fern - Knight's plume
107	FD	Subalpine fir - devil's club moist			05 BI - Devil's club - Rhododendron

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pg. #	MAP SYMBOL	HABITAT CLASS	MAP SYMBOL	HABITAT CLASS	ESSFmv3 SITE SERIES
109	VR	Sitka valerian - arrow-leaved ragwort moist meadow	VR	Sitka valerian - arrow-leaved ragwort meadow	
110	EF	Engelmann spruce floodplain	SF	Spruce floodplain	07 BI - Horsetail - Feathermoss
111	EH	Engelmann spruce - horsetail moist	HB	Horsetail - bunchberry	07 BI - Horsetail - Feathermoss (06 Sxw - Huckleberry - Highbush-cranberry)
113	BP	Black spruce - peat moss bog			
114	WS	Willow - sedge wetland	SE	Sedge wetland	
vii	RO[1] ROc[1] ROw[1]	Rock outcrop Rock outcrop cool aspect Rock outcrop warm aspect	RT RTc RTw	Rock/talus Rock/talus cool aspect Rock/talus warm aspect	
vii	TAc[1]	Talus cool aspect	RTc	Rock/talus cool aspect	

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pg. #	MAP SYMBOL	HABITAT CLASS	MAP SYMBOL	HABITAT CLASS	ESSFmvp3 ECOSYSTEMS
115	FM	Subalpine fir - white mountain-heather mesic			
117	FMc	Subalpine fir - white mountain-heather cool aspect	FL	Subalpine fir - liverwort krummholz	
119	FMw	Subalpine fir - white mountain-heather warm aspect	FL	Subalpine fir - liverwort krummholz	
121	FCp	Subalpine fir - crowberry ridge parkland phase	FC	Subalpine fir - crow/berry ridge	
122	WCc	Willow - cow-parsnip avalanche chute, cool aspect	WBc	Willow - bluejoint avalanche chute cool aspect	
123	WCw	Willow - cow-parsnip avalanche chute, warm aspect	WBw	Willow - bluejoint avalanche chute warm aspect	
124	FV	Subalpine fir - Sitka valerian moist parkland			
125	FVc	Subalpine fir - Sitka valerian moist parkland cool aspect	FL	Subalpine fir - liverwort krummholz	
127	FVw	Subalpine fir - Sitka valerian parkland moist warm aspect	FL	Subalpine fir - liverwort krummholz	
129	VR	Sitka valerian - arrow-leaved ragwort moist meadow	VR	Sitka valerian - arrow-leaved ragwort meadow	
130	WS	Willow - sedge wetland	SE	Sedge wetland	
vii	ROc[1] ROw[1]	Rock outcrop cool aspect Rock outcrop warm aspect	RTc RTw	Rock/talus cool aspect Rock/talus warm aspect	
vii	TAc[1] TAw[1]	Talus cool aspect Talus warm aspect	RTc RTw	Rock/talus cool aspect Rock/talus warm aspect	

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PG-#	MAP SYMBOL	HABITAT CLASS	MAP SYMBOL	HABITAT CLASS	ATn ECOSYSTEMS
131	FW	Altai fescue - dwarf willow tundra	FW	Altai fescue - dwarf willow tundra	dwarf willow - sedge - grass - cryptogam tundra
132	FWc	Altai fescue - dwarf willow tundra cool aspect	FW	Altai fescue - dwarf willow tundra	dwarf willow - sedge - grass - cryptogam tundra alpine heath
133	FWw	Altai fescue - dwarf willow tundra warm aspect	FW	Altai fescue - dwarf willow tundra	Altai fescue - lichen tundra
134	FK[2]	Subalpine fir krummholz	FL	Subalpine fir - liverwort krummholz	alpine heath
135	FKc[2]	Subalpine fir krummholz cool aspect	FL	Subalpine fir - liverwort krummholz	alpine heath
136	FKw[2]	Subalpine fir krummholz warm aspect	FL	Subalpine fir - liverwort krummholz	(alpine heath)
137	CFc	Cryptogam - Altai fescue very shallow soil, cool aspect	(RTc)	(Rock/talus cool aspect)	
138	CFw	Cryptogam - Altai fescue very shallow soil, warm aspect	(RTw)	(Rock/talus warm aspect)	
139	WM	Dwarf willow - entire-leaved white mountain-avens ridge	WM	Dwarf willow - entire-leaved mountain-avens ridge	cushion plant tundra
140	VR	Sitka valerian - arrow-leaved ragwort moist meadow	VR	Sitka valerian - arrow-leaved ragwort meadow	
vii	RO[1]	Rock outcrop	RT	Rock/talus	
vii	TA[1]	Talus	RT	Rock/talus	

[1] RO and TA habitat units are non-vegetated to sparsely vegetated with xerophytic vascular plants, lichens and mosses. They are not further described in the expanded legend.
[2] FK, FKc and FKw habitat units are now considered parkland ecosystems.

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OMINECA BIOPHYSICAL MAP LEGEND

BWBSdk1 01,(03,05)
SM - Spruce - moss mesic habitat class
SMf- Spruce - moss fine-textured soil habitat class
SMs- Spruce - moss shallow soil habitat class
submesic to mesic (subhygric) sites found on level to gentle slopes; sites underlain by morainal, glaciofluvial or (colluvial) blankets, morainal veneers, or fluvial terraces; mature stands with poorly to moderately developed shrub and herb layers and a continuous moss cover.

Map Symbol	SM1/SMf1/SMs1	SM2/SMf2/SMs2	SM3/SMf3/SMs3	SM4/SMf4/SMs4	SM5/SMf5/SMs5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	forb dominated cover of fireweed highbush-cranberry prickly rose soopolallie willows trembling aspen	open stand of lodgepole pine trembling aspen highbush-cranberry prickly rose soopolallie fireweed	closed forest of lodgepole pine trembling aspen soopolallie *Pleurozium schreberi* *Hylocomium splendens*	closed forest of lodgepole pine hybrid spruce *Pleurozium schreberi* *Hylocomium splendens* *Ptilium crista-castrensis*	closed forest of hybrid spruce lodgepole pine *Pleurozium schreberi* *Hylocomium splendens* *Ptilium crista-castrensis*
Associates	lodgepole pine showy aster twinflower bunchberry dwarf blueberry tall bluebells	willows showy aster twinflower bunchberry dwarf blueberry tall bluebells	hybrid spruce twinflower bunchberry dwarf blueberry ground-cedar *Ptilium crista-castrensis*	trembling aspen soopolallie prickly rose highbush-cranberry twinflower bunchberry dwarf blueberry palmate colt's foot	soopolallie prickly rose highbush-cranberry twinflower bunchberry dwarf blueberry palmate colt's- foot

Potential Forage for wild ungulates/ (grizzly bear) Abundant	highbush-cranberry prickly rose willows trembling aspen (fireweed) (soopolallie)	trembling aspen highbush-cranberry prickly rose (soopolallie) (fireweed)	(soopolallie)		
Moderate	black twinberry wildrye (redraspberry)	willows black twinberry wildrye (red raspberry)	prickly rose subalpine fir wildrye (fireweed)	prickly rose highbush-cranberry black twinberry subalpine fir wildrye (soopolallie) (fireweed)	prickly rose highbush-cranberry black twinberry subalpine fir (soopolallie) (fireweed)
Comments: Very common distribution in the study area. Dense, young forests (SM3) dominated by lodgepole pine have sparse shrub and herb layers and a continuous cover of feathermosses. Soopolallie is a dominant species on submesic sites. Sitka alder & subalpine fir may be associates and occasionally dominant species.					

OMINECA BIOPHYSICAL MAP LEGEND

BWBSdk1 01,(03)
SMc - Spruce - moss mesic cool aspect habitat class
submesic to mesic (subhygric) sites found on moderate to steep slopes with cool aspects; sites underlain by morainal blankets and veneers, colluvial or glaciofluvial blankets; mature stands with poorly to moderately developed shrub and herb layers and a continuous moss cover.

Map Symbol	SMc1	SMc2	SMc3	SMc4	SMc5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	forb dominated cover of fireweed highbush-cranberry prickly rose willows	open to dense stand of lodgepole pine highbush-cranberry prickly rose willows fireweed	closed to dense forest of lodgepole pine *Pleurozium schreberi* *Hylocomium splendens*	closed forest of lodgepole pine hybrid spruce *Pleurozium schreberi* *Hylocomium splendens* *Ptilium crista-castrensis*	closed forest of hybrid spruce lodgepole pine *Pleurozium schreberi* *Hylocomium splendens* *Ptilium crista-castrensis*
Associates	lodgepole pine soopolallie showy aster twinflower bunchberry dwarf blueberry tall bluebells	soopolallie showy aster twinflower bunchberry dwarf blueberry tall bluebells	hybrid spruce twinflower bunchberry dwarf blueberry palmate colt's foot *Ptilium crista-castrensis*	highbush-cranberry prickly rose soopolallie twinflower bunchberry palmate colt's-foot	highbush-cranberry prickly rose soopolallie twinflower bunchberry palmate colt's- foot
Potential Forage for wild ungulates/ (grizzly bear) Abundant	highbush-cranberry prickly rose willows (fireweed)	highbush-cranberry prickly rose willows (fireweed)	(soopolallie)		

OMINECA BIOPHYSICAL MAP LEGEND

Moderate	black twinberry wildrye (soopolallie) (redraspberry)	black twinberry wildrye (soopolallie) (red raspberry)	prickly rose subalpine fir wildrye (fireweed)	prickly rose highbush-cranberry black twinberry subalpine fir wildrye (soopolallie) (fireweed)	prickly rose highbush-cranberry black twinberry subalpine fir (soopolallie) (fireweed)
Comments: Very common distribution in the study area. Dense, young forests (SM3) dominated by lodgepole pine have sparse shrub and herb layers and a continuous cover of feathermosses. Soopolallie is a dominant species on submesic sites. Sitka alder & subalpine fir may be associates and occasionally dominant species.					

OMINECA BIOPHYSICAL MAP LEGEND

BWBSdk1 (02)
RK - Prickly rose - kinnikinnick warm aspect, coarse-textured soil habitat class
xeric to subxeric sites on steep, warm, southeast to west facing slopes and rocky ridges; sites with shallow (<50 cm.), coarse-textured, rapidly-drained soils occur on colluvial/morainal veneers over rock and are usually associated with rock outcrops and bluffs. The habitat unit is also found on very steep, warm slopes of coarse-textured glaciofluvial scarps.

Map Symbol	RK1	RK2	RK3	RK4	RK5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of saskatoon prickly rose Scouler's willow soopolallie kinnikinnick sedge	open stand of trembling aspen prickly rose saskatoon Scouler's willow soopolallie kinnikinnick	closed forest of trembling aspen prickly rose soopolallie kinnikinnick	open forest of lodgepole pine prickly rose kinnikinnick	open forest of lodgepole pine prickly rose kinnikinnick
Associates	trembling aspen common juniper Douglas maple showy aster wild sarsaparilla northern bedstraw	common juniper lodgepole pine Douglas maple showy aster wild sarsaparilla northern bedstraw	lodgepole pine saskatoon Scouler's willow common juniper wild sarsaparilla twinflower	trembling aspen saskatoon common juniper soopolallie twinflower wild strawberry	saskatoon common juniper soopolallie twinflower wild strawberry
Potential Forage for wild ungulates Abundant	saskatoon prickly rose Scouler's willow	trembling aspen prickly rose saskatoon Scouler's willow	prickly rose	prickly rose	prickly rose

Moderate	trembling aspen Douglas maple common snowberry pin cherry choke cherry inland bluegrass wildrye pumpelly brome slender wheatgrass	Douglas maple pin cherry inland bluegrass wildrye pumpelly brome slender wheatgrass	saskatoon pin cherry wildrye slender wheatgrass	saskatoon wildrye slender wheatgrass	saskatoon wildrye slender wheatgrass
Comments: The habitat unit is not extensive in distribution and occurs usually as a part of a complex with the AS habitat unit and exposed bedrock. Very dry sites on shallow colluvium support only shrub vegetation and may have low covers of common snowberry, pin cherry, choke cherry and pasture sage. Moister sites transitional to the AS habitat unit may support low covers of hybrid white spruce, thimbleberry, western meadowrue and bunchberry. This unit may provide important winter habitat for deer.					

OMINECA BIOPHYSICAL MAP LEGEND

BWBSdk1 02

PLc - Lodgepole pine - lichen coarse-textured soil, cool aspect habitat class

subxeric to (submesic), poor-nutrient sites on coarse-textured soils; the cool aspect phase occurs on colluvial/morainal veneers over rock and on very steep slopes of coarse-textured glaciofluvial scarps; sites have low productivity.

Map Symbol	PLc1	PLc2	PLc3	Plc4	PLc5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	lichen dominated cover of *Cladonia* spp. *Polytrichum* spp.	open stand of lodgepole pine *Cladonia* spp. *Polytrichum* spp.	closed forest of lodgepole pine *Pleurozium schreberi* *Peltigera apthosa*	closed forest of lodgepole pine hybrid spruce *Pleurozium schreberi* *Hylocomium splendens* *Peltigera apthosa*	closed forest of lodgepole pine hybrid spruce *Pleurozium schreberi* *Hylocomium splendens* *Peltigera apthosa*
Associates	lodgepole pine soopolallie prickly rose fireweed bunchberry twinflower dwarf blueberry	soopolallie prickly rose bunchberry twinflower dwarf blueberry hybrid spruce	hybrid spruce bunchberry twinflower dwarf blueberry ground-cedar *Hylocomium splendens*	black huckleberry subalpine fir bunchberry twinflower dwarf blueberry ground-cedar *Cladina* spp.	subalpine fir black huckleberry bunchberry twinflower dwarf blueberry ground-cedar *Cladina* spp.
Potential Forage for wild ungulates Abundant					
Moderate	prickly rose willows	prickly rose willows	*Cladina* spp. *Stereocaulon* sp.	*Cladina* spp. *Stereocaulon* sp. *Bryoria* spp.	*Cladina* spp. *Stereocaulon* sp. *Bryoria* spp.
Comments: Lodgepole pine of some stands support moderately high covers of the arboreal lichens *Bryoria* spp..					

BWBSdk1 02

PLt - Lodgepole pine - lichen coarse-textured soil, terrace habitat class

subxeric to (submesic), poor-nutrient sites on coarse-textured soils; the terrace phase of the habitat class is found on level glaciofluvial terraces and plains; sites have low productivity.

Map Symbol	PLt1	PLt2	PLt3	PLt4	PLt5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	lichen dominated cover of *Cladonia* spp. *Polytrichum* spp.	open stand of lodgepole pine *Cladonia* spp. *Polytrichum* spp.	closed forest of lodgepole pine *Cladina* spp. *Pleurozium schreberi*	closed forest of lodgepole pine *Cladina* spp. *Pleurozium schreberi*	closed forest of lodgepole pine *Cladina* spp. *Pleurozium schreberi*
Associates	lodgepole pine soopolallie prickly rose fireweed bunchberry twinflower lingonberry dwarf blueberry	soopolallie prickly rose bunchberry twinflower lingonberry dwarf blueberry	hybrid spruce bunchberry twinflower lingonberry dwarf blueberry ground-cedar *Cladonia* spp.	black huckleberry hybrid spruce subalpine fir bunchberry twinflower lingonberry dwarf blueberry ground-cedar *Cladonia* spp.	black huckleberry hybrid spruce subalpine fir bunchberry twinflower lingonberry dwarf blueberry ground-cedar *Cladonia* spp.
Potential Forage for wild ungulates Abundant			*Cladina* spp.	*Cladina* spp.	*Cladina* spp.
Moderate	prickly rose willows	prickly rose willows	*Stereocaulon* sp.	*Stereocaulon* sp. *Bryoria* spp.	*Stereocaulon* sp. *Bryoria* spp.

Comments: Pine-lichen terrace habitats are common in large valley bottoms. Lodgepole pine of some stands support moderately high covers of the arboreal lichens *Bryoria* spp. This habitat type provides important winter habitats for caribou due to high covers of the terrestrial lichens *Cladina* spp.. Caribou might also utilize arboreal lichens where available in this unit and adjacent BP habitats.

OMINECA BIOPHYSICAL MAP LEGEND

BWBSdk1 01,(03)
AS - Aspen - soopolallie warm aspect habitat class
ASs- Aspen - soopolallie warm aspect, shallow soil habitat class
submesic to mesic sites on warm, southeast to west facing, mid to lower slopes; sites are underlain by morainal blankets & veneers, glaciofluvial blankets or colluvial blankets/(veneers). Soils are medium-textured on steep slopes and medium to coarse-textured on moderate slopes; aspen and lodgepole pine dominate with vigorous shrubs and herbs (particularly on moister sites) and a lack of mosses & lichens.

Map Symbol	AS1/ASs1	AS2/ASs2	AS3/ASs3	AS4/ASs4	AS5/ASs5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of trembling aspen soopolallie prickly rose highbush-cranberry fireweed showy aster	open stand of trembling aspen lodgepole pine soopolallie prickly rose highbush-cranberry fireweed showy aster	closed mixed forest of trembling aspen lodgepole pine soopolallie prickly rose showy aster	closed mixed forest of trembling aspen lodgepole pine soopolallie prickly rose showy aster	closed forest of lodgepole pine hybrid spruce soopolallie prickly rose *Pleurozium schreberi* *Ptilium cristo-castrensis*
Associates	willows saskatoon lodgepole pine wildrye tall bluebells twinflower	willows saskatoon hybrid spruce wildrye western meadowrue tall bluebells twinflower	highbush-cranberry hybrid spruce fireweed wildrye western meadowrue tall bluebells twinflower false Solomon's-seal	hybrid spruce highbush-cranberry fireweed wildrye western meadowrue tall bluebells twinflower false Solomon's-seal	highbush-cranberry twinflower bunchberry tall bluebells fireweed false Solomon's-seal *Hylocomium splendens*
Potential Forage for wild ungulates/ (grizzly bear) Abundant	trembling aspen prickly rose highbush-cranberry (soopolallie) (fireweed)	trembling aspen prickly rose highbush-cranberry (soopolallie) (fireweed)	prickly rose (soopolallie)	prickly rose (soopolallie)	prickly rose (soopolallie)

Moderate	willows saskatoon red-osier dogwood (red raspberry) wildrye slender wheatgrass brome	willows saskatoon red-osier dogwood (red raspberry) wildrye slender wheatgrass brome	highbush-cranberry saskatoon red-osier dogwood wildrye slender wheatgrass (fireweed)	highbush-cranberry saskatoon red-osier dogwood wildrye (fireweed)	highbush-cranberry saskatoon red-osier dogwood (fireweed)
Comments: This habitat class is very similar to the SBSmk1 SS class in the study area. It is common on south facing slopes of the Omineca River Valley. Stands in this unit may rarely attain an old growth successional stage due to periodic disturbance by fire. Aspen is sometimes lacking in dense lodgepole pine stands on warm aspects. Subalpine fir may be an associate forest species on sites near the upper elevational limit of the BWBSdk1 variant.					

BWBSdk1 04,07

BL - Black spruce - lingonberry poor nutrient soil habitat class

submesic to subhygric, poor to (medium) nutrient sites on flat-lying to depressional terrain or cool slopes underlain by fluvial, glaciofluvial, lacustrine terraces and plains or morainal blankets; sites support a component of black spruce and are densely treed with little diversity of shrubs and herbs; there is little successional variation in this habitat.

Map Symbol	BL1	BL2	BL3	BL4	BL5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	forb dominated cover of fireweed willows prickly rose black twinberry	open to closed stand of lodgepole pine willows prickly rose black twinberry fireweed	closed forest of lodgepole pine hybrid spruce black spruce *Pleurozium schreberi* *Hylocomium splendens*	closed forest of lodgepole pine hybrid spruce black spruce *Pleurozium schreberi* *Hylocomium splendens*	closed forest of lodgepole pine hybrid spruce black spruce *Pleurozium schreberi* *Hylocomium splendens*
Associates	Labrador tea lodgepole pine lingonberry bunchberry twinflower	Labrador tea hybrid spruce black spruce lingonberry bunchberry twinflower	Labrador tea black twinberry lingonberry bunchberry twinflower *Ptilium-crista-castrensis*	Labrador tea black twinberry prickly rose lingonberry bunchberry twinflower *Ptilium-crista-castrensis*	Labrador tea black twinberry prickly rose lingonberry bunchberry twinflower *Ptilium-crista-castrensis*
Potential Forage for wild ungulates/ (grizzly bear) Abundant	willows prickly rose black twinberry (fireweed)	willows prickly rose black twinberry (fireweed)			

Moderate	(soopolallie) blackgooseberry wildrye	(soopolallie) blackgooseberry wildrye	black twinberry (soopolallie)	black twinberry prickly rose willows blackgooseberry (soopolallie)	black twinberry prickly rose willows black gooseberry (soopolallie)

Comments: Uncommon distribution in the study area. This habitat class combines the BEC BWBSdk1 04 and 07 site units as the two ecosystems cannot be distinguished by air photo interpretation. The unit is mapped by using forest cover map timber types to locate lodgepole pine-black spruce stands. Hybrid spruce-black spruce stands are mapped as the spruce-horsetail (SH) habitat unit. Soopolallie is restricted to drier sites of the habitat unit.(BWBSdk 1-04). Black twinberry is more characteristic of moister sites (BWBSdk1-07). Imperfectly drained sites may have low covers of horsetail, Sitka burnet and sphagnum moss.

OMINECA BIOPHYSICAL MAP LEGEND

BWBSdk1
WBc - Willow - bluejoint avalanche chute cool aspect habitat class
mesic to subhygric sites on colluvial blankets and fans of active avalanche chutes on northwest to east facing slopes; sites are shrub dominated with herbaceous openings.

Map Symbol	WBc1
Characteristic plant species	Shrub-herb
Dominants	shrub dominated cover (with herbaceous openings) of willows Sitka alder bluejoint cow parsnip brome wildrye
Associates	highbush-cranberry trembling aspen balsam poplar tall bluebells stinging nettle clasping twistedstalk
Potential Forage for wild ungulates/(grizzly bear) Abundant	willows bluejoint brome wildrye (cow parsnip)
Moderate	highbush-cranberry trembling aspen balsam poplar (fireweed)
Comments: This habitat unit was not sampled in the study area. The vegetation list is derived from Clement, C., 1990. "Biological Habitat Units of the Ospika River Drainage." Fletcher Challenge Canada Ltd., Woodland Division, MacKenzie.	

OMINECA BIOPHYSICAL MAP LEGEND

BWBSdk1
WBw - Willow - bluejoint avalanche chute warm aspect habitat class
mesic to subhygric sites on colluvial blankets and fans of active avalanche chutes on southeast to west facing slopes; sites are shrub dominated with herbaceous openings.

Map Symbol	WBw1
Characteristic plant species	Shrub-herb
Dominants	shrub dominated cover (with herbaceous openings) of willows Sitka alder bluejoint cow parsnip brome wildrye
Associates	highbush-cranberry trembling aspen balsam poplar tall bluebells stinging nettle clasping twistedstalk
Potential Forage for wild ungulates/(grizzly bear) Abundant	willows bluejoint brome wildrye (cow parsnip)
Moderate	highbush-cranberry trembling aspen balsam poplar (fireweed)
Comments: This habitat unit was not sampled in the study area. The vegetation list is derived from Clement, C., 1990. "Biological Habitat Units of the Ospika River Drainage." Fletcher Challenge Canada Ltd., Woodland Division, MacKenzie.	

BWBSdk1 08
SF - Spruce - floodplain habitat class
subhygric to hygric nutrient-rich sites fluvial deposits of active floodplains; most sites are subject to periodic inundation; high diversity and cover of shrubs in young, seral stands; mature forests are often a mosaic of tree clumps and shrub/herb dominated openings.

Map Symbol	SF1	SF2	SF3	SF4	SF5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of willows mountain alder black twinberry fireweed bluejoint	open stand of black cottonwood willows mountain alder black twinberry fireweed bluejoint	closed forest of black cottonwood	closed forest of black cottonwood hybrid spruce horsetails	open forest of hybrid spruce horsetails *Ptilium crista-castrensis* *Pleurozium schreberi* *Mnium* spp.
Associates	red-osier dogwood black gooseberry highbush-cranberry prickly rose Sitka burnet trailing raspberry great northern aster	red-osier dogwood black gooseberry highbush-cranberry prickly rose hybrid spruce Sitka burnet trailing raspberry horsetails	hybrid spruce mountain alder black twinberry red-osier dogwood prickly rose Sitka burnet trailing raspberry horsetails	subalpine fir mountain alder black twinberry red-osier dogwood Sitka burnet trailing raspberry bunchberry palmate colt's-foot	black cottonwood subalpine fir mountain alder black twinberry red-osier dogwood Sitka burnet trailing raspberry bunchberry palmate colt's-foot
Potential Forage for wild ungulates/ (grizzly bear) Abundant	willows black twinberry bluejoint (fireweed)	willows black twinberry bluejoint (fireweed)			

OMINECA BIOPHYSICAL MAP LEGEND

Moderate	red-osier dogwood black gooseberry highbush-cranberry black cottonwood (redraspberry) (northern black currant) (sedges)	red-osier dogwood black gooseberry highbush-cranberry black cottonwood (redraspberry) (northern black currant) (sedges)	willows black twinberry red-osier dogwood highbush-cranberry prickly rose black gooseberry	black twinberry red-osier dogwood highbush-cranberry willows prickly rose black gooseberry	black twinberry red-osier dogwood highbush-cranberry willows prickly rose black gooseberry
Comments: This habitat class is locally common along the Omineca River floodplain. Sedges may be an associate species on wet floodplain sites.					

OMINECA BIOPHYSICAL MAP LEGEND

BWBSdk1 08
SH - Spruce - horsetail moist habitat class
subhygric to hygric, medium to rich sites on inactive fluvial terraces/plains and organic veneers over fluvial deposits; sites with a diversity of shrubs, vigorous herbs and a robust, continuous moss layer; the habitat unit is locally common on toe to level slope positions of the Omineca River valley floor.

Map Symbol	SH1	SH2	SH3	SH4	SH5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	*Mature* Forests	Old-growth
Dominants	shrub dominated cover of mountain alder prickly rose willows horsetails fireweed bluejoint	open stand of hybrid spruce mountain alder prickly rose willows horsetails fireweed	open to closed forest of hybrid spruce horsetails *Hylocomium splendens* *Pleurozium schreberi* *Ptilium crista-castrensis* *Mnium* spp.	closed forest of hybrid white spruce horsetails *Hylocomium splendens* *Pleurozium schreberi* *Ptilium crista-castrensis* *Mnium* spp.	closed forest of hybrid white spruce horsetails *Hylocomium splendens* *Pleurozium schreberi* *Ptilium crista-castrensis* *Mnium* spp.
Associates	black twinberry highbush-cranberry red-osier dogwood red raspberry currants Sitka burnet	black twinberry highbush-cranberry red-osier dogwood red raspberry currants Sitka burnet bluejoint	black spruce mountain alder prickly rose willows black twinberry Sitka burnet bunchberry trailing raspberry tall bluebells	black spruce mountain alder prickly rose highbush-cranberry currants Sitka burnet bunchberry twinflower trailing raspberry tall bluebells	black spruce mountain alder prickly rose highbush-cranberry currants Sitka burnet bunchberry twinflower trailing raspberry tall bluebells

OMINECA BIOPHYSICAL MAP LEGEND

Potential Forage for wild ungulates/ (grizzly bear) Abundant	prickly rose willows bluejoint (fireweed)	prickly rose willows (fireweed)			
Moderate	black twinberry highbush-cranberry red-osier dogwood black gooseberry (red raspberry) (northern black currant) (Indian hellebore)	black twinberry highbush-cranberry red-osier dogwood black gooseberry (red raspberry) (northern black currant) bluejoint (Indian hellebore)	prickly rose highbush-cranberry black twinberry willows red-osier dogwood black gooseberry (red raspberry) (northern black currant) (Indian hellebore)	prickly rose highbush-cranberry black twinberry red-osier dogwood willows black gooseberry (red raspberry) (northern black currant) (Indian hellebore)	prickly rose highbush-cranberry black twinberry red-osier dogwood willows black gooseberry (red raspberry) (northern black currant) (Indian hellebore)
Comments: The habitat unit is locally common on toe to level slope positions of the Omineca River Valley floor. It is similar to the SH unit of the SBSmk1 variant.					

OMINECA BIOPHYSICAL MAP LEGEND

BWBSdk1 09

BP - Black spruce - peat moss bog habitat class

(hygric) to subhygric, nutrient poor sites on organic blankets or plains; bogs develop in depressional areas with water tables at or near the surface.

Map Symbol	BP1-5
Characteristic plant species	
Dominants	open, stunted forest of black spruce willows horsetails creeping-snowberry *Sphagnum* spp. *Bryoria* spp.
Associates	Labrador tea sedges *Tomenthypnum nitens* *Hylocomium splendens* *Aulacomnium palustre*
Potential Forage for wild ungulates/(grizzly bear) Abundant	willows *Bryoria* spp.
Moderate	(sedges)
Comments: Common distribution on the landscape. There is very little successional variation and low diversity of species in this habitat class. Stunted black spruce trees often support high covers of arboreal lichens.	

BWBSdkl
SE - Sedge wetland habitat class
shrub/sedge and forb dominated wetlands on subhydric sites in depression landscape with high water tables; underlain by organic blankets and veneers over fluvial or lacustrine deposits; riparian wet meadow & shrub swamp wetlands may also develop on mixtures of organic and mineral layers due to periodic flooding.

Map Symbol	*SE1*	SE1	SE1
Characteristic plant species	wet meadows	tall shrub swamp (transitional to SF1 habitat class)	fens/fens transitional to bogs
Dominants	lush herbaceous vegetation of sedges water avens great northern aster arrow-leavedragwort Sitka burnet	shrub dominated cover of willows sedges water avens great northern aster arrow-leaved ragwort Sitka burnet	sedge/moss dominated cover of willows scrub birch sedges *Drepanocladus* spp. *Tomenthyphum nitens* *Sphagnum* spp.
Associates	bluejoint sorrel kneeling angelica trailing raspberry northern bedstraw *Mnium* spp.	red-osier dogwood black twinberry bluejoint sorrel trailing raspberry northern bedstraw horsetails	bog-laurel Sitka burnet buckbean marsh cinquefoil arrow-grass *Mnium* spp. *Calliergon* spp. *Aulacomnium palustre*
Potential Forage for wild ungulates/ (grizzly bear) Abundant	(sedges) (arrow-leavedragwort)	willows (sedges) (arrow-leaved ragwort)	willows (sedges)

OMINECA BIOPHYSICAL MAP LEGEND

Map Symbol		SE1	SE1
Characteristic plant species	wet meadows	tall shrub swamp (transitional to SF1 habitat class)	fens/fens transitional to bogs
Moderate	bluejoint	red-osier dogwood black twinberry highbush-cranberry bluejoint prickly rose mannagrass	bluejoint

Comments: The habitat unit is common along water courses but generally not extensive in area. It includes riparian wet meadows and shrub swamps, fens and fens transitional to bogs. A range of substrates and water chemistries produce a variety of plant communities. Although willows &/or sedges dominate in this habitat unit, meadows have a higher diversity of forbs and lack mosses, swamps have a higher diversity of shrubs, fens are dominated by willow, sedges and brown mosses, while fens transitional to bogs are dominated by peat moss and have shrubs characteristic of bogs as associate species.

A horsetail marsh habitat unit sampled on the Omineca River floodplain has been included with the SE habitat class as it is difficult to distinguish it from sedge wetlands on the air photos. The marsh habitat occurs on subhydric sites underlain by fluvial deposits of active floodplains. The sites are periodically flooded and often covered by shallow water. Dominant species include swamp horsetail, marsh cinquefoil, water-parsnip, sedges and aquatic forbs.

OMINECA BIOPHYSICAL MAP LEGEND

SBSmk1 01
SB - Spruce - bunchberry mesic habitat class
SBs- Spruce - bunchberry shallow soil habitat class
submesic to mesic (subhygric) sites on level to gently sloping terrain; underlain by morainal blankets/veneers, glaciofluvial, glaciolacustrine or (colluvial) blankets; highly diverse young seral stands with a range of shrubs; mature stands dominated by an understory of moss with a low diversity of shrubs & herbs.

Map Symbol	SB1/SBs1	SB2/SBs2	SB3/SBs3	SB4/SBs4	SB5/SBs5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of trembling aspen Sitka alder willows fireweed bunchberry	open stand of lodgepole pine trembling aspen Sitka alder willows fireweed bunchberry	closed forest of lodgepole pine *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*	closed forest of lodgepole pine hybrid spruce bunchberry *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*	closed forest of hybrid spruce subalpine fir bunchberry *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*
Associates	red raspberry black huckleberry black twinberry bluejoint trailing raspberry *Polytrichum juniperinum*	hybrid spruce subalpine fir red raspberry black huckleberry black twinberry bluejoint	trembling aspen hybrid spruce subalpine fir black huckleberry bunchberry twinflower	trembling aspen subalpine fir Sitka alder black huckleberry highbush-cranberry twinflower stiff club-moss	lodgepole pine Sitka alder black huckleberry highbush-cranberry twinflower stiff club-moss five-leaved bramble
Potential Forage for wild ungulates/ (grizzly bear) Abundant	trembling aspen willows (fireweed)	trembling aspen willows (fireweed)			

OMINECA BIOPHYSICAL MAP LEGEND

Moderate	black twinberry highbush-cranberry prickly rose western mountain-ash black gooseberry subalpine fir bluejoint (red raspberry) (black huckleberry)	subalpine fir black twinberry highbush-cranberry prickly rose western mountain-ash black gooseberry bluejoint (red raspberry) (black huckleberry)	subalpine fir (black huckleberry)	subalpine fir black twinberry highbush-cranberry prickly rose western mountain-ash black gooseberry (black huckleberry)	subalpine fir black twinberry highbush-cranberry prickly rose western mountain-ash black gooseberry (black huckleberry)
Comments: Very common distribution in study area. Subalpine fir regeneration was observed to be browsed by ungulates.					

SBSmk1 01

SBc - Spruce - bunchberry mesic cool aspect habitat class

submesic to mesic sites on moderate to steep slopes with cool aspects; underlain by morainal blankets/veneers, glaciofluvial or colluvial blankets; highly diverse young seral stands with a range of shrubs; mature stands dominated by an understory of moss with a low diversity of shrubs & herbs.

Map Symbol	SBc1	*SBc2*	SBc3	SBc4	SBc5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of Sitka alder willows fireweed bunchberry	open stand of lodgepole pine hybrid spruce Sitka alder willows fireweed bunchberry	closed forest of lodgepole pine hybrid spruce *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*	closed forest of hybrid spruce lodgepole pine bunchberry *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*	closed forest of hybrid spruce subalpine fir bunchberry *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*
Associates	trembling aspen red raspberry black huckleberry black twinberry bluejoint *Polytrichum juniperinum*	trembling aspen subalpine fir red raspberry black huckleberry black twinberry bluejoint	trembling aspen subalpine fir black huckleberry bunchberry twinflower stiff club-moss	subalpine fir Sitka alder black huckleberry highbush-cranberry twinflower stiff club-moss	lodgepole pine Sitka alder black huckleberry highbush-cranberry twinflower stiff club-moss five-leaved bramble
Potential Forage for wild ungulates/ (grizzly bear) Abundant	willows (fireweed)	willows (fireweed)			

Moderate	trembling aspen black twinberry highbush-cranberry prickly rose western mountain-ash black gooseberry subalpine fir bluejoint (red raspberry) (black huckleberry)	trembling aspen subalpine fir black twinberry highbush-cranberry prickly rose western mountain-ash black gooseberry bluejoint (red raspberry) (black huckleberry)	subalpine fir (black huckleberry)	subalpine fir black twinberry highbush-cranberry prickly rose western mountain-ash black gooseberry (black huckleberry)	subalpine fir black twinberry highbush-cranberry prickly rose western mountain-ash black gooseberry (black huckleberry)
Comments: Very common distribution in study area. Subalpine fir regeneration was observed to be browsed by ungulates.					

SBSmk1 (02)

RK - Prickly rose - kinnikinnick warm aspect, coarse-textured soil habitat class

xeric to subxeric sites on steep, warm, southeast to west facing slopes and rocky ridges; sites with very shallow (<50 cm.), coarse-textured, rapidly-drained soils occur on colluvial/morainal veneers over rock and are usually associated with rock outcrops and bluffs. The habitat unit is also found on very steep, warm slopes of coarse-textured glaciofluvial scarps.

Map Symbol	RK1	RK2	RK3	RK4	RK5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of saskatoon prickly rose Scouler's willow soopolallie kinnikinnick sedge	open stand of trembling aspen prickly rose saskatoon Scouler's willow soopolallie kinnikinnick	closed forest of trembling aspen prickly rose soopolallie kinnikinnick	open forest of lodgepole pine prickly rose kinnikinnick	open forest of lodgepole pine prickly rose kinnikinnick
Associates	trembling aspen common juniper Douglas maple showy aster wild sarsaparilla northern bedstraw	common juniper lodgepole pine Douglas maple showy aster wild sarsaparilla northern bedstraw	lodgepole pine saskatoon Scouler's willow common juniper wild sarsaparilla twinflower	trembling aspen saskatoon common juniper soopolallie twinflower wild strawberry	saskatoon common juniper soopolallie twinflower wild strawberry
Potential Forage for wild ungulates Abundant	saskatoon prickly rose Scouler's willow	trembling aspen prickly rose saskatoon Scouler's willow	prickly rose	prickly rose	prickly rose

Moderate	trembling aspen Douglas maple common snowberry pin cherry choke cherry inland bluegrass wildrye pumpelly brome slenderwheatgrass	Douglas maple pin cherry inland bluegrass wildrye pumpelly brome slender wheatgrass	saskatoon pin cherry wildrye slender wheatgrass	saskatoon wildrye slender wheatgrass	saskatoon wildrye slender wheatgrass
Comments: The habitat unit is not extensive in distribution and occurs usually as a part of a complex with the SS habitat unit and exposed bedrock. Very dry sites on shallow colluvium support only shrub vegetation and may have low covers of common snowberry, pin cherry, choke cherry and pasture sage. Moister sites transitional to the SS habitat unit may support low covers of hybrid white spruce, thimbleberry, western meadowrue and bunchberry. This unit may provide important winter habitat for deer.					

SBSmk1 02

PLc - Lodgepole pine - lichen coarse-textured soil, cool aspect habitat class

subxeric to (submesic), poor-nutrient sites on coarse-textured soils; the cool aspect phase occurs on colluvial/morainal veneers over rock and on very steep slopes of coarse-textured glaciofluvial scarps; sites have low productivity.

Map Symbol	PLc1	PLc2	PLc3	PLc4	PLc5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	lichen dominated cover of *Cladonia* spp. *Polytrichum* spp.	open stand of lodgepole pine *Cladonia* spp. *Polytrichum* spp.	closed forest of lodgepole pine *Pleurozium schreberi* *Peltigera apthosa*	closed forest of lodgepole pine hybrid spruce *Pleurozium schreberi* *Hylocomium splendens* *Peltigera apthosa*	closed forest of lodgepole pine hybrid spruce *Pleurozium schreberi* *Hylocomium splendens* *Peltigera apthosa*
Associates	lodgepole pine soopolallie prickly rose fireweed bunchberry twinflower dwarf blueberry	soopolallie prickly rose bunchberry twinflower dwarf blueberry hybrid spruce	hybrid spruce bunchberry twinflower dwarf blueberry ground-cedar *Hylocomium splendens*	black huckleberry subalpine fir bunchberry twinflower dwarf blueberry ground-cedar *Cladina* spp.	subalpine fir black huckleberry bunchberry twinflower dwarf blueberry ground-cedar *Cladina* spp.
Potential Forage for wild ungulates Abundant					
Moderate	prickly rose willows	prickly rose willows	*Cladina* spp. *Stereocaulon* sp.	*Cladina* spp. *Stereocaulon* sp. *Bryoria* spp.	*Cladina* spp. *Stereocaulon* sp. *Bryoria* spp.
Comments: Lodgepole pine of some stands support moderately high covers of the arboreal lichens *Bryoria* spp..					

OMINECA BIOPHYSICAL MAP LEGEND

SBSmk1 03

PLt - Lodgepole pine - lichen coarse-textured soil, terrace habitat class

subxeric to (submesic), poor-nutrient sites on coarse-textured soils; the terrace phase of the habitat class is found on level glaciofluvial terraces and plains; sites have low productivity.

Map Symbol	PLt1	PLt2	PLt3	PLt4	PLt5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	lichen dominated cover of *Cladonia* spp. *Polytrichum* spp.	open stand of lodgepole pine *Cladonia* spp. *Polytrichum* spp.	closed forest of lodgepole pine *Cladina* spp. *Pleurozium schreberi*	closed forest of lodgepole pine *Cladina* spp. *Pleurozium schreberi*	closed forest of lodgepole pine *Cladina* spp. *Pleurozium schreberi*
Associates	lodgepole pine soopolallie prickly rose fireweed bunchberry twinflower dwarf blueberry	soopolallie prickly rose bunchberry twinflower dwarf blueberry	hybrid spruce bunchberry twinflower dwarf blueberry ground-cedar *Cladonia* spp.	black huckleberry hybrid spruce subalpine fir bunchberry twinflower dwarf blueberry ground-cedar *Cladonia* spp.	black huckleberry hybrid spruce subalpine fir bunchberry twinflower dwarf blueberry ground-cedar *Cladonia* spp.
Potential Forage for wild ungulates Abundant			*Cladina* spp.	*Cladina* spp.	*Cladina* spp.
Moderate	prickly rose willows	prickly rose willows	*Stereocaulon* sp.	*Stereocaulon* sp. *Bryoria* spp.	*Stereocaulon* sp. *Bryoria* spp.

Comments: Pine-lichen terrace habitats are common in large valley bottoms. Lodgepole pine of some stands support moderately high covers of the arboreal lichens *Bryoria* spp.. This habitat type provides important winter habitats for caribou due to high covers of the terrestrial lichens *Cladina* spp.. Caribou might also utilize arboreal lichens where available in this unit and adjacent BP habitats.

OMINECA BIOPHYSICAL MAP LEGEND

SBSmk1 05,01
SS - Spruce - soopolallie warm-aspect habitat class
SSs- Spruce - soopolallie warm aspect, shallow soil habitat class
submesic to mesic sites on moderate to steep slopes with warm, southeast to west aspects; sites are underlain by morainal, colluvial and glaciofluvial blankets or morainal/(colluvial) veneers; medium vigorous shrub & herb layers (particularly on moister sites) and a lack of mosses & lichens.

Map Symbol	SS1/SSs1	SS2/SSs2	SS3/SSs3	SS4/SSs4	SS5/SSs5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of trembling aspen soopolallie prickly rose thimbleberry willow fireweed	open stand of trembling aspen lodgepole pine soopolallie prickly rose thimbleberry fireweed	closed forest of trembling aspen lodgepole pine hybrid spruce soopolallie prickly rose thimbleberry	closed forest of lodgepole pine trembling aspen hybrid spruce soopolallie thimbleberry	closed forest of lodgepole pine hybrid spruce soopolallie *Pleurozium schreberi* *Ptilium crista-castrensis*
Associates	Sitka alder red raspberry saskatoon asters trailing raspberry northern bedstraw	hybrid spruce Sitka alder willow birch-leaved spirea wildsarsaparilla twinflower	birch-leaved spirea twinflower wild sarsaparilla westernmeadowrue showy aster fireweed	prickly rose birch-leaved spirea twinflower bunchberry wild sarsaparilla trailing raspberry false Solomon's-seal	subalpine fir thimbleberry birch-leaved spirea prickly rose twinflower bunchberry wild sarsaparilla trailing raspberry false Solomon's-seal
Potential Forage for wild ungulates/ (grizzly bear) Abundant	trembling aspen prickly rose willow (soopolallie) (fireweed)	trembling aspen prickly rose (soopolallie) (fireweed)	prickly rose (soopolallie)	(soopolallie)	(soopolallie)

OMINECA BIOPHYSICAL MAP LEGEND

Moderate	willow saskatoon highbush-cranberry red-osier dogwood black twinberry black cottonwood slender wheatgrass bluejoint (red raspberry)	willow saskatoon highbush-cranberry red-osier dogwood black twinberry black cottonwood slender wheatgrass bluejoint (red raspberry)	saskatoon highbush-cranberry red-osier dogwood black twinberry slender wheatgrass bluejoint (fireweed)	prickly rose highbush-cranberry red-osier dogwood black twinberry saskatoon	highbush-cranberry red-osier dogwood black twinberry prickly rose
Comments: Common distribution on south-facing, mid to lower slopes; black cottonwood, thimbleberry and red-osier dogwood may be dominant on moister (mesic-subhygric), nutrient-rich sites; bluejoint, mountain alder, baneberry, and low covers of sweet-scented bedstraw, mountain sweet-cicely, common horsetail and palmate colt's-foot may also be associated with moister sites of this unit.					

SBSmk1 06.1, (06.2)

BB - Black spruce - dwarf blueberry poor nutrient soil habitat class

submesic to hygric, poor nutrient sites on flat to gently sloping terrain underlain by glaciofluvial or morainal blankets; little successional variation and low diversity and cover of shrubs and herbs.

Map Symbol	BB1	BB2	BB3	BB4	BB5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	forb dominated cover of fireweed black huckleberry	open stand of lodgepole pine black huckleberry	closed forest of lodgepole pine *Pleurozium schreberi*	closed forest of lodgepole pine black spruce subalpine fir black huckleberry *Pleurozium schreberi* *Hylocomium splendens* *Ptilium crista-castrensis*	closed forest of lodgepole pine black spruce subalpine fir black huckleberry *Pleurozium schreberi* *Hylocomium splendens* *Ptilium crista-castrensis*
Associates	black twinberry prickly rose bunchberry dwarf blueberry palmate colt's-foot oak fern	black twinberry prickly rose fireweed bunchberry dwarf blueberry oak fern	black spruce subalpine fir hybrid spruce black huckleberry dwarf blueberry bunchberry oak fern	hybrid spruce bunchberry dwarf blueberry palmate colt's-foot five-leaved bramble oak fern	hybrid spruce bunchberry dwarf blueberry palmate colt's-foot five-leaved bramble oak fern
Potential Forage for wild ungulates/ (grizzly bear) Abundant	(black huckleberry)	(black huckleberry)		(black huckleberry)	(black huckleberry)

OMINECA BIOPHYSICAL MAP LEGEND

Moderate	black twinberry prickly rose	black twinberry prickly rose	(black huckleberry)	black twinberry prickly rose	black twinberry prickly rose

Comments: This habitat unit combines the SBSmk1 06.1 and 06.2 site units as the two ecosystems cannot be distinguished by air photo interpretation. The habitat unit is mapped by using forest cover map timber types to locate lodgepole pine - black spruce stands. The dry ecosystem (06.1) differs from the moist one (06.2) by having soopolallie, bastard toad-flax and fireweed and lacking saskatoon, oakfern, five-leaved bramble and queen's cup. Only the SBSmk1 06.1 site unit, which is locally common in some areas, was sampled in the study area. The SBSmk1 06.2 ecosystem has an uncommon distribution in the subzone and may be restricted to imperfectly drained sites near bogs.

OMINECA BIOPHYSICAL MAP LEGEND

SBSmk1
WBc - Willow - bluejoint avalanche chute cool aspect habitat class
mesic to subhygric sites on colluvial blankets and fans of active avalanche chutes on northwest to east facing slopes; sites are shrub dominated with herbaceous openings.

Map Symbol	WBc1
Characteristic plant species	Shrub-herb
Dominants	shrub dominated cover (with herbaceous openings) of willows Sitka alder bluejoint cow parsnip brome wildrye
Associates	highbush-cranberry trembling aspen balsam poplar tall bluebells stinging nettle clasping twistedstalk
Potential Forage for wild ungulates/(grizzly bear) Abundant	willows bluejoint brome wildrye (cow parsnip)
Moderate	highbush-cranberry trembling aspen balsam poplar (fireweed)
Comments: This habitat unit was not sampled in the study area. The vegetation list is derived from Clement, C., 1990. "Biological Habitat Units of the Ospika River Drainage." Fletcher Challenge Canada Ltd., Woodland Division, MacKenzie.	

OMINECA BIOPHYSICAL MAP LEGEND

SBSmk1
WBw - Willow - bluejoint avalanche chute warm aspect habitat class
mesic to subhygric sites on colluvial blankets and fans of active avalanche chutes on southeast to west facing slopes; sites are shrub dominated with herbaceous openings.

Map Symbol	WBw1
Characteristic plant species	Shrub-herb
Dominants	shrub dominated cover (with herbaceous openings) of willows Sitka alder bluejoint cow parsnip brome wildrye
Associates	highbush-cranberry trembling aspen balsam poplar tall bluebells stinging nettle clasping twistedstalk
Potential Forage for wild ungulates/(grizzly bear) Abundant	willows bluejoint brome wildrye (cow parsnip)
Moderate	highbush-cranberry trembling aspen balsam poplar (fireweed)
Comments: This habitat unit was not sampled in the study area. The vegetation list is derived from Clement, C., 1990. "Biological Habitat Units of the Ospika River Drainage." Fletcher Challenge Canada Ltd., Woodland Division, MacKenzie.	

OMINECA BIOPHYSICAL MAP LEGEND

SBSmk1 07,08

AO - Alder - oak fern moist habitat class

subhygric to (hygric) sites in moisture receiving, mid-lower, toe and level slope positions on morainal and colluvial blankets; seepage water may be present. Young seral sites have a diversity of shrubs and herbs; mature forests with closed canopies have less shrub and herb cover.

Map Symbol	A01	A02	AO3	A 04	A05
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub and forb dominated cover of alders black twinberry fireweed bluejoint wood horsetail oak fern	open stand of lodgepole pine hybrid spruce alders black twinberry fireweed oak fern	closed forest of lodgepole pine hybrid spruce oak fern *Pleurozium schreberi* *Ptilium crista-castrensis* *Mnium* spp.	open to closed forest of hybrid spruce subalpine fir oak fern *Pleurozium schreberi* *Ptilium crista-castrensis* *Mnium* spp.	open to closed forest of hybrid spruce subalpine fir oak fern *Pleurozium schreberi* *Ptilium crista-castrensis* *Mnium* spp.
Associates	trembling aspen thimbleberry highbush-cranberry red raspberry black gooseberry three-leaved foamflower trailing raspberry	trembling aspen thimbleberry highbush-cranberry red raspberry black gooseberry three-leaved foamflower bluejoint	subalpine fir trembling aspen alders black gooseberry bunchberry three-leaved foamflower five-leaved bramble	lodgepole pine trembling aspen alders black gooseberry bunchberry three-leaved foamflower five-leaved bramble	alders black gooseberry black twinberry highbush-cranberry bunchberry three-leaved foamflower five-leaved bramble
Potential Forage for wild ungulates/ (grizzly bear) Abundant	black twinberry bluejoint (fireweed)	black twinberry (fireweed)			

OMINECA BIOPHYSICAL MAP LEGEND

Moderate	trembling aspen black twinberry highbush-cranberry black gooseberry red-osier dogwood red elderberry (red raspberry) (oval-leaved blueberry) (Indian hellebore)	trembling aspen black twinberry highbush-cranberry black gooseberry red-osier dogwood red elderberry bluejoint (red raspberry) (oval-leaved blueberry) (Indian hellebore)	black gooseberry black twinberry highbush-cranberry red-osier dogwood (oval-leaved blueberry) (Indian hellebore)	black gooseberry black twinberry highbush-cranberry red-osier dogwood (oval-leaved blueberry) (Indian hellebore)	black gooseberry black twinberry highbush-cranberry red-osier dogwood (oval-leaved blueberry) (Indian hellebore)

Comments: This habitat unit is fairly common on slopes receiving seepage. It represents 2 BEC site units of the SBSmk1 variant including the SBSmk1-07 and 08 ecosystems. Sites corresponding to the 08 site unit may have devil's club, lady fern and oak fern as dominant understory species. Those sites may occur on gentle lower to toe slopes and flats receiving seepage and in gullies. Both Sitka alder & mountain alder occur in this habitat unit. Mosses may persist in early seral stages of hygric sites dominated by devil's club and ferns.

SBSmk1 09.1

SF - Spruce - floodplain habitat class

subhygric to hygric nutrient-rich sites fluvial deposits of active floodplains; most sites are subject to periodic inundation; high diversity and cover of shrubs in young, seral stands; mature forests are often a mosaic of tree clumps and shrub/herb dominated openings.

Map Symbol	SF1	SF2	SF3	SF4	SF5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of willows mountain alder black twinberry fireweed bluejoint	open stand of black cottonwood willows mountain alder black twinberry fireweed bluejoint	closed forest of black cottonwood	closed forest of black cottonwood hybrid spruce horsetails	open forest of hybrid spruce horsetails *Ptilium crista-castrensis* *Pleurozium schreberi* *Mnium* spp.
Associates	red-osier dogwood black gooseberry highbush-cranberry prickly rose Sitka burnet trailing raspberry great northern aster	red-osier dogwood black gooseberry highbush-cranberry prickly rose hybrid spruce Sitka burnet trailing raspberry horsetails	hybrid spruce mountain alder black twinberry red-osier dogwood prickly rose Sitka burnet trailing raspberry horsetails	subalpine fir mountain alder black twinberry red-osier dogwood Sitka burnet trailing raspberry bunchberry palmate colt's-foot	black cottonwood subalpine fir mountain alder black twinberry red-osier dogwood Sitka burnet trailing raspberry bunchberry palmate colt's-foot
Potential Forage for wild ungulates/ (grizzly bear) Abundant	willows black twinberry bluejoint (fireweed)	willows black twinberry bluejoint (fireweed)			

OMINECA BIOPHYSICAL MAP LEGEND

Moderate	red-osier dogwood black gooseberry highbush-cranberry black cottonwood (red raspberry) (northern black currant) (sedges)	red-osier dogwood black gooseberry highbush-cranberry black cottonwood (red raspberry) (northern black currant) (sedges)	willows black twinberry red-osier dogwood highbush-cranberry prickly rose black gooseberry	black twinberry red-osier dogwood highbush-cranberry willows prickly rose black gooseberry	black twinberry red-osier dogwood highbush-cranberry willows prickly rose black gooseberry

Comments: Common distribution along river & stream courses, but small in area. Only a shrub-herb stage floodplain site was sampled in the SBSmk1 variant. Vegetation lists for other stages are derived from Delong, C. et al, 1987. "A Field Guide for Identification and Interpretation of Ecosystems of the SBSe2 in the Prince George Forest Region." B.C. Forest Service and Clement, C., 1990. " Biophysical Habitat Units of the Ospika River Drainage." Fletcher Challenge Canada Ltd., Woodland Division, MacKenzie. Sedges may be an associate species on wet floodplain sites.

SBSmk1 (09.1), 09.2
SH - Spruce - horsetail moist habitat class
subhygric to hygric (subhygric), medium to rich, receiving sites on inactive fluvial terraces & fluvial fans; also imperfectly-drained sites on gentle toe slopes and flats underlain by morainal/lacustrine blankets or organic veneers over fluvial/morainal/lacustrine deposits.

Map Symbol	SH1	SH2	SH3	SH4	SH5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of black twinberry willows mountain alder horsetails fireweed bluejoint	open stand of lodgepole pine hybrid spruce black twinberry willows mountain alder horsetails	closed forest of hybrid spruce lodgepole pine horsetails	closed forest of hybrid spruce horsetails *Hylocomium splendens* *Ptilium crista-castrensis* *Pleurozium schreberi* *Mnium* spp.	closed forest of hybrid spruce horsetails *Hylocomium splendens* *Ptilium crista-castrensis* *Pleurozium schreberi* *Mnium* spp.
Associates	highbush-cranberry red-osier dogwood black gooseberry prickly rose trailing raspberry bunchberry Sitka burnet	highbush-cranberry red-osier dogwood blackgooseberry prickly rose trailing raspberry bunchberry Sitka burnet fireweed	black twinberry willows trailing raspberry bunchberry Sitka burnet tall bluebells	lodgepole pine subalpine fir black twinberry willows trailing raspberry bunchberry Sitka burnet tall bluebells	subalpine fir black spruce black twinberry willows trailing raspberry bunchberry Sitka burnet tall bluebells
Potential Forage for wild ungulates/ (grizzly bear) Abundant	black twinberry willows bluejoint (fireweed)	black twinberry willows (fireweed)			

Moderate	highbush-cranberry red-osier dogwood black gooseberry prickly rose trembling aspen	highbush-cranberry red-osier dogwood black gooseberry prickly rose trembling aspen (fireweed)	black twinberry willows highbush-cranberry black gooseberry red-osier dogwood	black twinberry willows highbush-cranberry black gooseberry red-osier dogwood	black twinberry willows highbush-cranberry black gooseberry red-osier dogwood
Comments: Uncommon distribution. Black spruce and *Sphagnum* spp. may be associate species on poorly drained sites that have organic veneers over mineral soils and water tables within 50 cm of the surface. Common horsetail, meadow horsetail and wood horsetail are all found in this unit.					

SBSmk1 10

BP - Black spruce - peat moss bog habitat class

(hygric) to subhygric, nutrient poor sites on organic blankets or plains; bogs develop in depressional landscape with high water tables; often located on the perimeter of sedge wetlands.

Map Symbol	BP1-5
Characteristic plant species	
Dominants	open forest of black spruce Labrador tea scrub birch common horsetail *Sphagnum* spp. *Bryoria* spp.
Associates	willows sedges trailing raspberry water avens palmate coltʼs-foot *Mnium* spp.
Potential Forage for wild ungulates/(grizzly bear) Abundant	*Bryoria* spp.
Moderate	willows bluejoint (sedges) (arrow-leaved ragwort)
Comments: Common in distribution but usually small in size; very little successional variation and low diversity in this habitat unit; stunted black spruce trees often support high covers of arboreal lichens.	

SBSmk1
SE - Sedge wetland habitat class
shrub/sedge and forb dominated wetlands on subhydric sites in depression landscape with high water tables; underlain by organic blankets and veneers over fluvial or lacustrine deposits; riparian wet meadow & shrub swamp wetlands may also develop on mixtures of organic and mineral layers due to periodic flooding.

Map Symbol	SE1	SE1	SE1
Characteristic plant species	wet meadows	tall shrub swamp (transitional to SF1 habitat class)	fens/fens transitional to bogs
Dominants	lush herbaceous vegetation of sedges water avens great northern aster arrow-leaved ragwort Sitka burnet	shrub dominated cover of willows sedges water avens great northern aster arrow-leaved ragwort Sitka burnet	sedge/moss dominated cover of willows scrub birch sedges *Drepanocladus* spp. *T0omenthyphum nitens* *Sphagnum* spp.
Associates	bluejoint sorrel kneeling angelica trailing raspberry northern bedstraw *Mnium* spp.	red-osier dogwood black twinberry bluejoint sorrel trailing raspberry northern bedstraw horsetails	bog-laurel Sitka burnet buckbean marsh cinquefoil arrow-grass *Mnium* spp. *Calliergon* spp. *Aulacomnium palustre*
Potential Forage for wild ungulates/ (grizzly bear) Abundant	(sedges) (arrow-leaved ragwort)	willows (sedges) (arrow-leaved ragwort)	willows (sedges)

Moderate	bluejoint	red-osier dogwood black twinberry highbush-cranberry bluejoint prickly rose mannagrass	bluejoint
Comments: The habitat unit is common along water courses but generally not extensive in area. It includes riparian wet meadows and shrub swamps, fens and fens transitional to bogs. A range of substrates and water chemistries produce a variety of plant communities. Although willows &/or sedges dominate in this habitat unit, meadows have a higher diversity of forbs and lack mosses, swamps have a higher diversity of shrubs, fens are dominated by willow, sedges and brown mosses, while fens transitional to bogs are dominated by peat moss and have shrubs characteristic of bogs as associate species.			

OMINECA BIOPHYSICAL MAP LEGEND

SBSmk2 01,03
SB - Spruce - bunchberry mesic habitat class
SBf- Spruce - bunchberry fine-textured soil habitat class
submesic to mesic sites on level to gently sloping terrain; sites occur on morainal, lacustrine or glaciofluvial blankets, morainal veneers, or fluvial terraces and fans; young seral stands with a high diversity of shrubs; mature stands with dense canopies and low diversity of shrubs and herbs.

Map Symbol	SB1/SBf1	SB2/SBf2	SB3/SBf3	sB4/sBf4	SBS/SBf5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of trembling aspen willows Sitka alder red raspberry fireweed bunchberry	open stand of lodgepole pine trembling aspen Sitka alder red raspberry fireweed bunchberry	closed forest of lodgepole pine hybrid spruce trembling aspen Sitka alder *Pleurozium schreberi*	closed forest of lodgepole pine hybrid spruce bunchberry *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*	closed forest of hybrid spruce subalpine fir bunchberry *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*
Associates	paper birch black twinberry prickly rose birch-leaved spirea wild sarsaparilla twinflower bluejoint	paper birch willows black twinberry prickly rose wild sarsaparilla twinflower bluejoint	paper birch subalpine fir bunchberry wild sarsaparilla twinflower trailing raspberry	trembling aspen subalpine fir Sitka alder highbush-cranberry prickly rose wild sarsaparilla trailing raspberry	Sitka alder highbush-cranberry prickly rose wild sarsaparilla trailing raspberry twinflower palmate colt's-foot
Potential Forage for wild ungulates/ (grizzly bear) Abundant	trembling aspen willows (red raspberry) (fireweed)	trembling aspen (red raspberry) (fireweed)			

Moderate	black twinberry prickly rose highbush-cranberry balsam poplar bluejoint wildrye	willows black twinberry prickly rose highbush-cranberry balsam poplar bluejoint wildrye	subalpine fir highbush-cranberry	subalpine fir highbush-cranberry prickly rose black twinberry	subalpine fir highbush-cranberry prickly rose black twinberry
Comments: Very common distribution on gently rolling to level terrain west of the Williston Lake Reservoir.					

SBSmk2 01,03
SBc - Spruce - bunchberry mesic cool aspect habitat class
submesic to mesic sites on moderate to steep slopes with cool aspects; sites occur on morainal blankets and veneers or glaciofluvial blankets; young seral stands with a high diversity of shrubs; mature stands with dense canopies and low diversity of shrubs and herbs.

Map Symbol	SBc1	SBc2	SBc3	SBc4	SBc5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of willows Sitka alder red raspberry fireweed bunchberry	open stand of lodgepole pine Sitka alder red raspberry fireweed bunchberry	closed forest of lodgepole pine hybrid spruce Sitka alder *Pleurozium schreberi*	closed forest of lodgepole pine hybrid spruce bunchberry *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*	closed forest of hybrid spruce subalpine fir bunchberry *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*
Associates	trembling aspen paper birch black twinberry prickly rose twinflower bluejoint	trembling aspen paper birch willows black twinberry prickly rose twinflower bluejoint	trembling aspen paper birch subalpine fir bunchberry twinflower palmate colt's-foot *Ptilium crista-castrensis*	subalpine fir Sitka alder highbush-cranberry prickly rose trailing raspberry twinflower palmate colt's-foot	Sitka alder highbush-cranberry prickly rose trailing raspberry twinflower palmate colt's-foot
Potential Forage for wild ungulates/ (grizzly bear) Abundant	willows (red raspberry) (fireweed)	(red raspberry) (fireweed)			

Moderate	trembling aspen black twinberry prickly rose highbush-cranberry balsam poplar bluejoint wildrye	trembling aspen willows black twinberry prickly rose highbush-cranberry balsam poplar bluejoint wildrye	subalpine fir highbush-cranberry	subalpine fir highbush-cranberry prickly rose black twinberry	subalpine fir highbush-cranberry prickly rose black twinberry
Comments: Very common distribution on gently rolling to level terrain west of the Williston Lake Reservoir.					

SBSmk2

RK - Prickly rose - kinnikinnick warm aspect, coarse-textured soil habitat class

xeric to subxeric sites on steep, warm, southeast to west facing slopes and rocky ridges; sites with shallow (<50 cm.), coarse-textured, rapidly-drained soils occur on colluvial/morainal veneers over rock and are usually associated with rock outcrops and bluffs. The habitat unit is also found on very steep, warm slopes of coarse-textured glaciofluvial scarps.

Map Symbol	RK1	RK2	RK3	RK4	RK5
Characteristic plant species	Shrub-herb	Pole-Sapling	YoungForests	Mature Forests	Old-growth
Dominants	shrub dominated cover of saskatoon prickly rose Scouler's willow soopolallie kinnikinnick sedge	open stand of trembling aspen prickly rose saskatoon Scouler's willow soopolallie kinnikinnick	closed forest of trembling aspen prickly rose soopolallie kinnikinnick	open forest of lodgepole pine prickly rose kinnikinnick	open forest of lodgepole pine prickly rose kinnikinnick
Associates	trembling aspen common juniper Douglas maple showy aster wild sarsaparilla northern bedstraw	common juniper lodgepole pine Douglas maple showy aster wild sarsaparilla northern bedstraw	lodgepole pine saskatoon Scouler's willow common juniper wild sarsaparilla twinflower	trembling aspen saskatoon common juniper soopolallie twinflower wild strawberry	saskatoon common juniper soopolallie twinflower wild strawberry
Potential Forage for wild ungulates Abundant	saskatoon prickly rose Scouler's willow	trembling aspen prickly rose saskatoon Scouler's willow	prickly rose	prickly rose	prickly rose

Moderate	trembling aspen Douglas maple common snowberry pin cherry choke cherry inland bluegrass wildrye pumpelly brome slenderwheatgrass	Douglas maple pin cherry inland bluegrass wildrye pumpelly brome slender wheatgrass	saskatoon pin cherry wildrye slender wheatgrass	saskatoon wildrye slender wheatgrass	saskatoon wildrye slender wheatgrass
Comments: The unit is rare in the SBSmk2 variant within the study area and is restricted to steep, dry glaciofluvial scarps with warm aspects.					

SBSmk2 02
PLt - Lodgepole pine - lichen coarse-textured soil, terrace habitat class
xeric to subxeric sites on level glaciofluvial or fluvial terraces and plains; dry, coarse-textured soils result in low productivity sites with low diversity of species.

Map Symbol	PLt1	PLt2	PLt3	PLt4	Plt5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	lichen dominated cover of *Cladonia* spp. *Polytrichum* spp.	open stand of lodgepole pine *Cladonia* spp. *Polytrichum* spp.	closed forest of lodgepole pine *Pleurozium schreberi*	open forest of lodgepole pine *Cladina* spp. *Pleurozium schreberi*	open forest of lodgepole pine *Cladina* spp. *Pleurozium schreberi*
Associates	lodgepole pine soopolallie prickly rose fireweed kinnikinnick dwarf blueberry twinflower	soopolallie prickly rose kinnikinnick dwarf blueberry twinflower fireweed	soopolallie kinnikinnick ground-cedar twinflower dwarf blueberry *Cladina* spp. *Cladonia* spp.	soopolallie prickly rose kinnikinnick twinflower dwarf blueberry ground-cedar	soopolallie prickly rose kinnikinnick twinflower dwarf blueberry ground-cedar
Potential Forage for wild ungulates Abundant				*Cladina* spp.	*Cladina* spp.
Moderate	prickly rose	prickly rose	*Cladina* spp.	prickly rose highbush-cranberry	prickly rose highbush-cranberry
Comments: The habitat unit is uncommon in the SBSmk2 variant within the study area. It is very similar to the SBSmk1-PLt unit.					

SBSmk2 03,01
SS - Spruce - Soopolallie warm aspect habitat class
submesic to mesic sites on moderate to steep slopes with warm, southeast to west aspects; sites are underlain by morainal, colluvial and glaciofluvial blankets or morainal/(colluvial) veneers; medium vigorous shrub & herb layers (particularly on moister sites) and a lack of mosses & lichens.

Map Symbol	SS1	SS2	S S 3 :	SS4	SS5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of trembling aspen soopolallie prickly rose thimbleberry willow fireweed	open stand of trembling aspen lodgepole pine soopolallie prickly rose thimbleberry fireweed	closed forest of trembling aspen lodgepole pine hybrid spruce soopolallie prickly rose thimbleberry	closed forest of lodgepole pine trembling aspen hybrid spruce soopolallie thimbleberry	closed forest of lodgepole pine hybrid spruce soopolallie *Pleurozium schreberi* *Ptilium crista-castrensis*
Associates	Sitka alder red raspberry saskatoon asters trailing raspberry northern bedstraw	hybrid spruce Sitka alder willow birch-leaved spirea wild sarsaparilla twinflower	birch-leaved spirea twinflower wild sarsaparilla western meadowrue showy aster fireweed	prickly rose birch-leaved spirea twinflower bunchberry wild sarsaparilla trailing raspberry false Solomon's-seal	subalpine fir thimbleberry birch-leaved spirea prickly rose twinflower bunchberry wild sarsaparilla trailing raspberry false Solomon's-seal
Potential Forage for wild ungulates/ (grizzlybear) Abundant	trembling aspen prickly rose willow (soopolallie) (fireweed)	trembling aspen prickly rose (soopolallie) (fireweed)	prickly rose (soopolallie)	(soopolallie)	(soopolallie)

OMINECA BIOPHYSICAL MAP LEGEND

Moderate	willow saskatoon highbush-cranberry red-osier dogwood black twinberry black cottonwood slender wheatgrass bluejoint (red raspberry)	willow saskatoon highbush-cranberry red-osier dogwood black twinberry black cottonwood slender wheatgrass bluejoint (red raspberry)	saskatoon highbush-cranberry red-osier dogwood black twinberry slender wheatgrass bluejoint (fireweed)	prickly rose highbush-cranberry red-osier dogwood black twinberry saskatoon	highbush-cranberry red-osier dogwood black twinberry prickly rose

Comments: This unit was not sampled in the study area. It has a rare distribution as terrain within the SBSmk2 variant of the study area is mainly flat to gently undulating. Sitka alder may persist in later successional stands of this unit where it was observed to be lacking in the SBSmk1-SS. The SBSmk2 unit may lack queen's cup and have fuzzy-spiked wildrye in the understory.

OMINECA BIOPHYSICAL MAP LEGEND

SBSmk2 04
BS - Black spruce - birch-leaved spirea poor nutrient soil habitat class
BSf- Black spruce - birch-leaved spirea fine-textured soil habitat class
submesic to subhygric, poor nutrient sites found on gently sloping to flat or slightly depressional terrain; sites underlain by glaciofluvial or glaciolacustrine blankets and plains and are often associated with compact soils; little successional variation and low diversity of shrubs and herbs.

Map Symbol	BS1/BSf1	BL2/BSf2	BL3/BSf3	BL4/BSf4	BL5/Bsf5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of Sitka alder willows	open stand of lodgepole pine Sitka alder willows	closed forest of lodgepole pine black spruce Sitka alder *Pleurozium schreberi* *Hylocomium splendens* *Ptilium crista-castrensis*	closed forest of lodgepole pine black spruce Sitka alder *Pleurozium schreberi* *Hylocomium splendens* *Ptilium crista-castrensis*	closed forest of lodgepole pine black spruce Sitka alder *Pleurozium schreberi* *Hylocomium splendens* *Ptilium crista-castrensis*
Associates	lodgepole pine trembling aspen prickly rose black twinberry fireweed bastard toad-flax	trembling aspen black spruce prickly rose black twinberry bastard toad-flax palmate colt's-foot fireweed	trembling aspen hybrid spruce birch-leaved spirea bunchberry twinflower bastard toad-flax palmate colt's-foot	hybrid spruce soopolallie Labrador tea black huckleberry birch-leaved spirea bunchberry twinflower bastard toad-flax	hybrid spruce soopolallie Labrador tea black huckleberry birch-leaved spirea bunchberry twinflower bastard toad-flax
Potential Forage for wild ungulates/ (grizzlybear) Abundant	willows	willows			

Moderate	trembling aspen prickly rose black twinberry (soopolallie) bluejoint (fireweed)	trembling aspen prickly rose black twinberry (soopolallie) bluejoint (fireweed)	black twinberry (soopolallie)	black twinberry (soopolallie) (black huckleberry)	black twinberry (soopolallie) (black huckleberry)
Comments: The habitat unit is common on gently undulating to level terrain west of the Williston Lake Reservoir. It is the dominant habitat on fine-textured, moderately to imperfectly-drained, glaciolacustrine deposits and can be extensive in area.					

SBSmk2 05
DO - Devil's club - oak fern moist habitat class
subhygric sites on lower to toe and level slope positions receiving seepage and in gullies; soils are coarse to medium-textured and formed on morainal, (glacio)fluvial or lacustrine blankets and fluvial fans; stands usually open & dominated by robust, vigorous shrubs.

Map Symbol	DO1	DO2	DO3	DO4	DO5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of Sitka alder black twinberry devil's club fireweed bluejoint oak fern	open stand of lodgepole pine hybrid spruce Sitka alder black twinberry devil's club fireweed oak fern	open forest of hybrid spruce lodgepole pine subalpine fir devil's club oak fern	open forest of hybrid spruce subalpine fir devil's club oak fern *Ptilium crista-castrensis* *Hylocomium splendens* *Pleurozium schreberi*	open forest of hybrid spruce subalpine fir devil's club oak fern *Ptilium crista-castrensis* *Hylocomium splendens* *Pleurozium schreberi*
Associates	trembling aspen thimbleberry black gooseberry highbush-cranberry bunchberry trailing raspberry	trembling aspen subalpine fir thimbleberry black gooseberry highbush-cranberry bluejoint bunchberry trailing raspberry	trembling aspen Sitka alder black gooseberry black twinberry bunchberry claspingtwistedstalk trailing raspberry	lodgepole pine Sitka alder black gooseberry black twinberry bunchberry clasping twistedstalk trailing raspberry *Mnium* spp.	Sitka alder black gooseberry black twinberry bunchberry clasping twistedstalk trailing raspberry *Mnium* spp.
Potential Forage for wild ungulates/ (grizzlybear) Abundant	black twinberry bluejoint (fireweed)	black twinberry (fireweed)			

Moderate	trembling aspen black gooseberry highbush-cranberry prickly rose red-osier dogwood	black gooseberry highbush-cranberry prickly rose red-osier dogwood bluejoint	black gooseberry black twinberry highbush-cranberry red-osier dogwood	black gooseberry black twinberry highbush-cranberry red-osier dogwood	black gooseberry black twinberry highbush-cranberry red-osier dogwood
Comments: Uncommon distribution and sites not large in area. The habitat class was not sampled in the area. It is similar in species composition and successional trends to the SBSmk1-AO habitat unit. Vegetation lists were derived using the SBSmk1-AO lists and MacKinnon, A. et al, 1990. "A Field Guide for Identification and Interpretation of Ecosystems of the Northwest Portion of the Prince George Forest Region." B.C. Forest Service, Prince George, B.C.					

SBSmk2 06

SF - Spruce floodplain habitat class

subhygric to hygric nutrient-rich sites fluvial deposits of active floodplains; most sites are subject to periodic inundation; high diversity and cover of shrubs in young, seral stands; mature forests are often a mosaic of tree clumps and shrub/herb dominated openings.

Map Symbol	SF1	SF2	SF3	SF4	SF5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of willows mountain alder black twinberry fireweed bluejoint	open stand of black cottonwood willows mountain alder black twinberry fireweed bluejoint	closed forest of black cottonwood	closed forest of black cottonwood hybrid spruce horsetails	open forest of hybrid spruce horsetails *Ptilium crista-castrensis* *Pleurozium schreberi* *Mnium* spp.
Associates	red-osier dogwood black gooseberry highbush-cranberry prickly rose Sitka burnet trailing raspberry great northern aster	red-osier dogwood black gooseberry highbush-cranberry prickly rose hybrid spruce Sitka burnet trailing raspberry horsetails	hybrid spruce mountain alder black twinberry red-osier dogwood prickly rose Sitka burnet trailing raspberry horsetails	subalpine fir mountain alder black twinberry red-osier dogwood Sitka burnet trailing raspberry bunchberry palmate colt's-foot	black cottonwood subalpine fir mountain alder black twinberry red-osier dogwood Sitka burnet trailing raspberry bunchberry palmate colt's-foot
Potential Forage for wild ungulates/ (grizzly bear) Abundant	willows black twinberry bluejoint (fireweed)	willows black twinberry bluejoint (fireweed)			

Moderate	red-osier dogwood black gooseberry highbush-cranberry black cottonwood (red raspberry) (sedges)	red-osier dogwood black gooseberry highbush-cranberry black cottonwood (red raspberry) (sedges)	willows black twinberry red-osier dogwood highbush-cranberry prickly rose black gooseberry	black twinberry red-osier dogwood highbush-cranberry willows prickly rose black gooseberry	black twinberry red-osier dogwood highbush-cranberry willows prickly rose black gooseberry
Comments: The SBSmk2-SF unit differs from the SBSmk1-SF in that it lacks currants and has wood horsetail, pink wintergreen, wild sarsaparilla and Rhytidiadelphus triquetrus as additional associate species. The SBSmk2 unit is common but sites are small in area. Sedges may be an associate species on wet floodplain sites.					

SBSmk2 06
SH - Spruce - horsetail moist habitat class
subhygric to hygric (subhygric), medium to rich, receiving sites on inactive fluvial terraces & fluvial fans; also imperfectly-drained sites on gentle toe slopes and flats underlain by morainal/lacustrine blankets or organic veneers over fluvial/morainal/lacustrine deposits.

Map Symbol	SH1	SH2	SH3	SH4	SH5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of black twinberry willows mountain alder horsetails fireweed bluejoint	open stand of lodgepole pine hybrid spruce black twinberry willows mountain alder horsetails	closed forest of hybrid spruce lodgepole pine horsetails	closed forest of hybrid spruce horsetails *Hylocomium splendens* *Ptilium crista-castrensis* *Pleurozium schreberi* *Mnium* spp.	closed forest of hybrid spruce horsetails *Hylocomium splendens* *Ptilium crista-castrensis* *Pleurozium schreberi* *Mnium* spp.
Associates	highbush-cranberry red-osier dogwood black gooseberry prickly rose trailing raspberry bunchberry Sitka burnet	highbush-cranberry red-osier dogwood black gooseberry prickly rose trailing raspberry bunchberry Sitka burnet fireweed	black twinberry willows trailing raspberry bunchberry Sitka burnet tall bluebells	lodgepole pine subalpine fir black twinberry willows trailing raspberry bunchberry Sitka burnet tall bluebells	subalpine fir black spruce black twinberry willows trailing raspberry bunchberry Sitka burnet tall bluebells
Potential Forage for wild ungulates/ (grizzly bear) Abundant	black twinberry willows bluejoint (fireweed)	black twinberry willows			

Moderate	highbush-cranberry red-osier dogwood black gooseberry prickly rose trembling aspen	highbush-cranberry red-osier dogwood black gooseberry prickly rose trembling aspen (fireweed)	black twinberry willows highbush-cranberry black gooseberry red-osier dogwood	black twinberry willows highbush-cranberry black gooseberry red-osier dogwood	black twinberry willows highbush-cranberry black gooseberry red-osier dogwood
Comments: The habitat unit differs from the SBSmk1-SH in that it has pink wintergreen, wild sarsaparilla and Rhytiadelphus triquetrus as additional associate species. It has an uncommon distribution on the landscape.					

SBSmk2
BP - Black spruce - peat moss bog habitat class
(hygric) to subhygric, nutrient poor sites on organic blankets or plains; bogs develop in depressional landscape with high water tables; often located on the perimeter of sedge wetlands.

Map Symbol	BP1-5
Characteristic plant species	
Dominants	open forest of black spruce Labrador tea scrub birch common horsetail *Sphagnum* spp. *Bryoria* spp.
Associates	willows sedges trailing raspberry water avens palmate coltʼs-foot *Mnium* spp.
Potential Forage for wild ungulates/(grizzly bear) Abundant	*Bryoria* spp.
Moderate	willows bluejoint (sedges) (arrow-leaved ragwort)
Comments: Common in distribution but usually small in size; very little successional variation and low diversity in this habitat unit; stunted black spruce trees often support high covers of arboreal lichens.	

SBSmk2
SE - Sedge wetland habitat class
shrub/sedge and forb dominated wetlands on subhydric sites in depression landscape with high water tables; underlain by organic blankets and veneers over fluvial or lacustrine deposits; riparian wet meadow & shrub swamp wetlands may also develop on mixtures of organic and mineral layers due to periodic flooding.

Map Symbol	*SE1*	SE1	*SE1*
Characteristic plant species	wet meadows	tall shrub swamp (transitional to SF1 habitat class)	fens/fens transitional to bogs
Dominants	lush herbaceous vegetation of sedges water avens great northern aster arrow-leaved ragwort Sitka burnet	shrub dominated cover of willows sedges water avens great northern aster arrow-leaved ragwort Sitka burnet	sedge/moss dominated cover of willows scrub birch sedges *Drepanocladus* spp. *Tomenthyphum nitens* *Sphagnum* spp.
Associates	bluejoint sorrel kneeling angelica trailing raspberry northern bedstraw *Mnium* spp.	red-osierdogwood black twinberry bluejoint sorrel trailing raspberry northern bedstraw horsetails	bog-laurel Sitka burnet buckbean marsh cinquefoil arrow-grass *Mnium* spp. *Callergon* spp. *Aulacomnium palustre*
Potential Forage for wild ungulates/ (grizzly bear) Abundant	(sedges) (arrow-leavedragwort)	willows (sedges) (arrow-leaved ragwort)	willows (sedges)

Moderate	bluejoint	red-osier dogwood black twinberry highbush-cranberry bluejoint prickly rose mannagrass	bluejoint
Comments. The habitat unit is common along water courses but generally not extensive in area. It includes riparian wet meadows and shrub swamps, fens and fens transitional to bogs. A range of substrates and water chemistries produce a variety of plant communities. Although willows &/or sedges dominate in this habitat unit, meadows have a higher diversity of forbs and lack mosses, swamps have a higher diversity of shrubs, fens are dominated by willow, sedges and brown mosses, while fens transitional to bogs are dominated by peat moss and have shrubs characteristic of bogs as associate species.			

SBSwk2 01,(03)
SO - Spruce - oak fern mesic habitat class
(submesic) to mesic sites on level to gently sloping terrain; sites occur on morainal blankets/veneers and glaciofluvial or (colluvial) blankets; soil textures vary from coarse to moderately fine; young seral stands with a diversity of shrubs and herbs; mature forests with higher canopy closure and less shrub/herb cover.

Map Symbol	SO1	SO2	SO3	SO4	SO5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of trembling aspen paper birch Sitka alder willow oak fern fireweed	open stand of trembling aspen paper birch lodgepole pine Sitka alder willow oak fern fireweed	closed forest of trembling aspen paper birch lodgepole pine oak fern *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*	closed forest of lodgepole pine hybrid spruce subalpine fir oak fern *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*	closed forest of hybrid spruce subalpine fir oak fern *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*
Associates	thimbleberry black twinberry black huckleberry bluejoint bunchberry wildsarsaparilla	hybrid spruce thimbleberry black twinberry black huckleberry bluejoint bunchberry wild sarsaparilla	hybrid spruce subalpine fir Sitka alder black huckleberry bunchberry wild sarsaparilla five-leaved bramble	trembling aspen paper birch black huckleberry Sitka alder black gooseberry bunchberry wild sarsaparilla five-leaved bramble stiff club-moss	black huckleberry Sitka alder black gooseberry highbush-cranberry bunchberry wild sarsaparilla five-leaved bramble stiff club-moss
Potential Forage for wild ungulates/ (grizzly bear) Abundant	trembling aspen willow (fireweed)	trembling aspen willow (fireweed)			

Moderate	black twinberry highbush-cranberry black gooseberry red-osier dogwood western mountain-ash red elderberry bluejoint (black huckleberry) (red raspberry)	black twinberry highbush-cranberry black gooseberry red-osier dogwood western mountain-ash red elderberry bluejoint (black huckleberry) (red raspberry)	subalpine fir highbush-cranberry black gooseberry (black huckleberry)	subalpine fir black gooseberry highbush-cranberry western mountain-ash black twinberry red-osier dogwood (black huckleberry)	black gooseberry highbush-cranberry subalpine fir western mountain-ash black twinberry red-osier dogwood (black huckleberry)
Comments: Common distribution; submesic sites lack oak fern and may have lodgepole pine co-dominating with hybrid spruce in overmature stands; constancies and covers of other species on submesic sites are similar to those on mesic sites.					

SBSwk2 01,(03)
SOc - Spruce - oak fern mesic cool aspect habitat class
(submesic) to mesic sites on mid to (upper) slopes with cool aspects; sites occur on morainal, glaciofluvial or colluvial blankets; soil textures vary from coarse to moderately fine; young seral stands with a diversity of shrubs and herbs; mature forests with higher canopy closure and less shrub/herb cover.

Map Symbol	SOc1	SOc2	SOc3	SOc4	SOc5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of Sitka alder willow oak fern fireweed	open stand of lodgepole pine Sitka alder willow oak fern fireweed	closed forest of lodgepole pine hybrid spruce oak fern *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*	closed forest of lodgepole pine hybrid spruce subalpine fir oak fern *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*	closed forest of hybrid spruce subalpine fir oak fern *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*
Associates	trembling aspen paper birch black twinberry black huckleberry bluejoint bunchberry	trembling aspen paper birch hybrid spruce black twinberry black huckleberry bluejoint bunchberry	trembling aspen paper birch subalpine fir Sitka alder black huckleberry bunchberry five-leaved bramble	black huckleberry Sitka alder black gooseberry bunchberry five-leaved bramble stiff club-moss	black huckleberry Sitka alder black gooseberry highbush-cranberry bunchberry five-leaved bramble stiff club-moss
Potential Forage for wild ungulates/ (grizzly bear) Abundant	willow (fireweed)	willow (fireweed)			

Moderate	highbush-cranberry black twinberry trembling aspen red-oisier dogwood western mountain-ash red elderberry bluejoint (black huckleberry) (red raspberry)	highbush-cranberry black twinberry trembling aspen red-oisier dogwood western mountain-ash red elderberry bluejoint (black huckleberry) (red raspberry)	subalpine fir highbush-cranberry (black huckleberry)	subalpine fir highbush-cranberry western mountain-ash black twinberry (black huckleberry)	highbush-cranberry subalpine fir western mountain-ash black twinberry (black huckleberry)
Comments: Common distribution; submesic sites lack oak fern and may have lodgepole pine co-dominating with hybrid spruce in overmature stands; constancies and covers of other species on submesic sites are similar to those on mesic sites.					

SBSwk2

RK - Prickly rose - kinnikinnick warm aspect, coarse-textured soil habitat class

xeric to subxeric sites on steep, warm, southeast to west facing slopes and rocky ridges; sites with shallow (<50 cm.), coarse-textured, rapidly-drained soils occur on colluvial/morainal veneers over rock and are usually associated with rock outcrops and bluffs. The habitat unit is also found on very steep, warm slopes of coarse-textured glaciofluvial scarps.

Map Symbol	RK1	RK2	RK3	RK4	RK5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of saskatoon prickly rose Scouler's willow soopolallie kinnikinnick sedge	open stand of trembling aspen prickly rose saskatoon Scouler's willow soopolallie kinnikinnick	closed forest of trembling aspen prickly rose soopolallie kinnikinnick	open forest of lodgepole pine prickly rose kinnikinnick	open forest of lodgepole pine prickly rose kinnikinnick
Associates	trembling aspen common juniper Douglas maple showy aster wild sarsaparilla northern bedstraw	common juniper lodgepole pine Douglas maple showy aster wild sarsaparilla northern bedstraw	lodgepole pine saskatoon Scouler's willow common juniper wild sarsaparilla twinflower	trembling aspen saskatoon common juniper soopolallie twinflower wild strawberry	saskatoon common juniper soopolallie twinflower wild strawberry
Potential Forage for wild ungulates Abundant	saskatoon prickly rose Scouler's willow	trembling aspen prickly rose saskatoon Scouler's willow	prickly rose	prickly rose	prickly rose

Moderate	trembling aspen Douglas maple common snowberry pin cherry choke cherry inland bluegrass wildrye pumpelly brome slender wheatgrass	Douglas maple pin cherry inland bluegrass wildrye pumpelly brome slender wheatgrass	saskatoon pin cherry wildrye slender wheatgrass	saskatoon wildrye slender wheatgrass	saskatoon wildrye slender wheatgrass
Comments: The habitat units are small in area and restricted to warm aspects on steep, rocky slopes, rocky ridges and glaciofluvial scarps.					

SBSwk2
PLc - Lodgepole pine - lichen coarse-textured soil, cool aspect habitat class
subxeric to (submesic), poor-nutrient sites on coarse-textured soils; the cool aspect phase occurs on colluvial/morainal veneers over rock and on very steep slopes of coarse-textured glaciofluvial scarps; sites have low productivity.

Map Symbol	PLc1	PLc2	PLc3	PLc4	PLc5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	lichen dominated cover of *Cladonia* spp. *Polytrichum* spp.	open stand of lodgepole pine *Cladonia* spp. *Polytrichum* spp.	closed forest of lodgepole pine *Pleurozium schreberi* *Peltigera apthosa*	closed forest of lodgepole pine hybrid spruce *Pleurozium schreberi* *Hylocomium splendens* *Peltigera apthosa*	closed forest of lodgepole pine hybrid spruce *Pleurozium schreberi* *Hylocomium splendens* *Peltigera apthosa*
Associates	lodgepole pine soopolallie prickly rose fireweed bunchberry twinflower dwarf blueberry	soopolallie prickly rose bunchberry twinflower dwarf blueberry hybrid spruce	hybrid spruce bunchberry twinflower dwarf blueberry ground-cedar *Hylocomium splendens*	black huckleberry subalpine fir bunchberry twinflower dwarf blueberry ground-cedar *Cladina* spp.	subalpine fir black huckleberry bunchberry twinflower dwarf blueberry ground-cedar *Cladina* spp.
Potential Forage for wild ungulates Abundant					
Moderate	prickly rose willows	prickly rose willows	*Cladina* spp. *Stereocaulon* sp.	*Cladina* spp. *Stereocaulon* sp. *Bryoria* spp.	*Cladina* spp. *Stereocaulon* sp. *Bryoria* spp.
Comments: Uncommon distribution in the SBSwk2 variant of the study area. Sitka alder may be an associate species in this habitat unit.					

SBSwk2 02

PLt - Lodgepole pine - lichen coarse-textured soil, terrace habitat class

subxeric to (submesic), poor-nutrient sites on coarse-textured soils; the terrace phase of the habitat class is found on level glaciofluvial terraces and plains; sites have low productivity.

Map Symbol	PLt1	PLt2	PLt3	PLt4	Plt5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	lichen dominated cover of *Cladonia* spp. *Polytrichum* spp.	open stand of lodgepole pine *Cladonia* spp. *Polytrichum* spp.	closed forest of lodgepole pine *Cladina* spp. *Pleurozium schreberi*	closed forest of lodgepole pine *Cladina* spp. *Pleurozium schreberi*	closed forest of lodgepole pine *Cladina* spp. *Pleurozium schreberi*
Associates	lodgepole pine soopolallie prickly rose fireweed bunchberry twinflower dwarf blueberry	soopolallie prickly rose bunchberry twinflower dwarf blueberry	hybrid spruce bunchberry twinflower dwarf blueberry ground-cedar *Cladonia* spp.	black huckleberry hybrid spruce subalpine fir bunchberry twinflower dwarf blueberry ground-cedar *Cladonia* spp.	black huckleberry hybrid spruce subalpine fir bunchberry twinflower dwarf blueberry ground-cedar *Cladonia* spp.
Potential Forage for wild ungulates Abundant			*Cladina* spp.	*Cladina* spp.	*Cladina* spp.
Moderate	prickly rose willows	prickly rose willows	*Stereocaulon* sp.	*Stereocaulon* sp. *Bryoria* spp.	*Stereocaulon* sp. *Bryoria* spp.
Comments: Uncommon distribution in the SBSwk2 variant of the study area. Sitka alder may be an associate species in this habitat unit.					

SBSwk2 03,101)
PH - Lodgepole Pine - black huckleberry warm aspect habitat class
submesic to (mesic) sites on moderate to steep slopes with warm, southeast to west aspects; sites occur on predominantly glaciofluvial, morainal or colluvial blankets and less frequently on morainal/(colluvial) veneers; young seral stands have a diversity of shrubs.

Map Symbol	PH1	PH2	PH3	PH4	Ph5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of trembling aspen Sitka alder willows fireweed	open stand of trembling aspen lodgepole pine Sitka alder willows fireweed	closed forest of trembling aspen lodgepole pine black huckleberry Sitka alder	closed forest of lodgepole pine hybrid spruce trembling aspen black huckleberry *Pleurozium schreberi*	closed forest of hybrid spruce subalpine fir lodgepole pine black huckleberry *Pleurozium schreberi* *Ptilium crista-castrensis*
Associates	thimbleberry black huckleberry red-raspberry asters bunchberry twinflower false Solomon's-seal	thimbleberry black huckleberry red-raspberry asters bunchberry twinflower false Solomon's-seal	hybrid spruce subalpine fir highbush-cranberry thimbleberry bunchberry wild sarsaparilla twinflower queen's cup	subalpine fir Sitka alder highbush-cranberry thimbleberry bunchberry wild sarsaparilla twinflower queen's cup	Sitka alder highbush-cranberry thimbleberry bunchberry wild sarsaparilla twinflower queen's cup
Potential Forage for wild ungulates/ (grizzly bear) Abundant	trembling aspen willows (fireweed)	trembling aspen willows (fireweed)	(black huckleberry)	(black huckleberry)	(black huckleberry)

Moderate	prickly rose western mountain-ash highbush-cranberry black gooseberry (black huckleberry) (red raspberry) bluejoint	prickly rose western mountain-ash highbush-cranberry black gooseberry (black huckleberry) (red raspberry) bluejoint	highbush-cranberry black gooseberry	highbush-cranberry black gooseberry western mountain-ash	highbush-cranberry black gooseberry western mountain-ash
Comments: Common distribution in the SBS wk2 within the study area.					

SBSwk2 04

BH - Black spruce - black huckleberry poor nutrient soil habitat class

submesic to subhygric, poor nutrient sites on gently sloping to level terrain or moderate slopes with cool aspects; sites occur on glacio(fluvial) or morainal blankets and soils are moderately fine to coarse-textured; little successional variation.

Map Symbol	BH1	BH2	BH3	BH4	BH5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of Sitka alder black huckleberry	open stand of lodgepole pine Sitka alder black huckleberry	closed forest of lodgepole pine hybrid spruce *Ptilium crista-castrensis* *Pleurozium schreberi*	closed forest of lodgepole pine hybrid spruce black spruce black huckleberry *Ptilium crista-castrensis* *Pleurozium schreberi*	closed forest of hybrid spruce black spruce lodgepole pine black huckleberry *Ptilium crista-castrensis* *Pleurozium schreberi*
Associates	trembling aspen lodgepole pine prickly rose fireweed bunchberry twinflower	trembling aspen prickly rose fireweed bunchberry twinflower hybrid spruce	trembling aspen black spruce subalpine fir black huckleberry Sitka alder bunchberry twinflower	subalpine fir Sitka alder prickly rose highbush-cranberry Labrador tea bunchberry twinflower dwarf scouring-rush	subalpine fir Sitka alder prickly rose highbush-cranberry Labrador tea bunchberry twinflower dwarf scouring-rush
Potential Forage for wild ungulates/ (grizzly bear) Abundant	(black huckleberry)	(black huckleberry)		(black huckleberry)	(black huckleberry)
Moderate	trembling aspen prickly rose highbush-cranberry western mountain-ash (fireweed)	trembling aspen prickly rose highbush-cranberry western mountain-ash (fireweed)	prickly rose highbush-cranberry (black huckleberry)	prickly rose highbush-cranberry western mountain-ash	prickly rose highbush-cranberry western mountain-ash

Comments: The unit has an uncommon distribution in the study area and was not sampled. Vegetation lists are derived using MacKinnon, A., 1990. "A Field Guide to the Identification and Interpretation of Ecosystems of the Northwest Portion of the Prince George Forest Region." B.C. Forest Service, Prince George, B.C.

SBSwk2
WBc - Willow - bluejoint avalanche chute cool aspect habitat class
mesic to subhygric sites on colluvial blankets and fans of active avalanche chutes on northwest to east facing slopes; sites are shrub dominated with herbaceous openings.

Map Symbol	*WBc1*
Characteristic plant species	Shrub-herb
Dominants	shrub dominated cover (with herbaceous openings) of willows Sitka alder bluejoint cow parsnip brome wildrye
Associates	highbush-cranberry trembling aspen balsam poplar tall bluebells stinging nettle clasping twistedstalk
Potential Forage for wild ungulates/(grizzly bear) Abundant	willows bluejoint brome wildrye (cow parsnip)
Moderate	highbush-cranberry trembling aspen balsam poplar (fireweed)
Comments: This habitat unit was not sampled in the study area. The vegetation list is derived from Clement, C., 1990. "Biological Habitat Units of the Ospika River Drainage." Fletcher Challenge Canada Ltd., Woodland Division, MacKenzie.	

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SBSwk2
WBw - Willow - bluejoint avalanche chute warm aspect habitat class
mesic to subhygric sites on colluvial blankets and fans of active avalanche chutes on southeast to west facing slopes; sites are shrub dominated with herbaceous openings.

Map Symbol	
Characteristic plant species	Shrub-herb
Dominants	shrub dominated cover (with herbaceous openings) of willows Sitka alder bluejoint cow parsnip brome wildrye
Associates	highbush-cranberry trembling aspen balsam poplar tall bluebells stinging nettle clasping twistedstalk
Potential Forage for wild ungulates/(grizzly bear) Abundant	willows bluejoint brome wildrye (cow parsnip)
Moderate	highbush-cranberry trembling aspen balsam poplar (fireweed)
Comments: This habitat unit was not sampled in the study area. The vegetation list is derived from Clement, C., 1990. "Biological Habitat Units of the Ospika River Drainage." Fletcher Challenge Canada Ltd., Woodland Division, MacKenzie.	

SBSwk2 05

SD - Spruce - devil's club moist habitat class

subhygric to (hygric) sites on lower and toe slopes receiving seepage water and in gullies; stands usually open and dominated by robust, vigorous shrubs.

Map Symbol	SD1	*SD2*	SD3	SD4	*SD5*
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of Sitka alder devil's club thimbleberry oak fern fireweed wood horsetail bluejoint	open stand of hybrid spruce subalpine fir Sitka alder devil's club thimbleberry oak fern fireweed	open forest of hybrid spruce subalpine fir Sitka alder devil's club oak fern *Ptilium crista-castrensis*	open forest of hybrid spruce subalpine fir devil's club Sitka alder oak fern *Ptilium crista-castrensis* *Pleurozium schreberi*	open forest of hybrid spruce subalpine fir devil's club Sitka alder oak fern *Ptilium crista-castrensis* *Pleurozium schreberi*
Associates	black gooseberry red-osier dogwood common horsetail foamflower bunchberry queen's cup	black gooseberry red-osier dogwood lodgepole pine horsetails bluejoint foamflower bunchberry queen's cup	lodgepole pine thimbleberry red-osier dogwood five-leaved bramble bunchberry foamflower queen's cup *Mnium* spp.	lodgepole pine thimbleberry five-leaved bramble bunchberry foamflower queen's cup stiff club-moss *Mnium* spp.	lodgepole pine thimbleberry five-leaved bramble bunchberry foamflower queen's cup stiff club-moss *Mnium* spp.
Potential Forage for wild ungulates/ (grizzly bear) Abundant	bluejoint (fireweed)	(fireweed)			

Moderate	black gooseberry red-osier dogwood (mountain sweet-cicely)	black gooseberry red-osier dogwood bluejoint (mountain sweet-cicely)	red-osier dogwood black gooseberry (mountain sweet-cicely)	red-osier dogwood black gooseberry (mountain sweet-cicely)	red-osier dogwood black gooseberry (mountain sweet-cicely)
Comments: Fairly common distribution within the SBSwk2 variant of the study area.					

SBSwk2 06

SF – Spruce floodplain habitat class

subhygric to hygric nutrient-rich sites fluvial deposits of active floodplains; most sites are subject to periodic inundation; high diversity and cover of shrubs in young, seral strands; mature forests are often a mosaic of tree clumps and shrub/herb dominated openings.

Map Symbol	SF1	SF2	SF3	SF4	SF5
Characteristic Plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of willows mountain alder black twinberry fireweed bluejoint	open stand of black cottonwood willows mountain alder black twinberry fireweed bluejoint	closed forest of black cottonwood	closed forest of black cottonwood hybrid spruce horsetails	open forest of hybrid spruce Horsetails *Ptilium crista-castrensis* *Pleurozium schreberi* *Mnium* spp.
Associates	red-osier dogwood black gooseberry highbush-cranberry prickly rose Sitka burnet trailing raspberry great northern aster	red-osier dogwood black gooseberry highbush-cranberry prickly rose hybrid spruce Sitka burnet trailing raspberry horsetails	hybrid spruce mountain alder black twinberry red-osier dogwood prickly rose Sitka burnet trailing raspberry horsetails	subalpine fir mountain alder black twinberry red-osier dogwood Sitka burnet trailing raspberry bunchberry palmate colt's-foot	black cottonwood subalpine fir mountain alder black twinberry red-osier dogwood Sitka burnet trailing raspberry bunchberry palmate colt's-foot
Potential Forage for wild ungulates/ (grizzly bear) Abundant	willows black twinberry bluejoint (fireweed)	willows black twinberry bluejoint (fireweed)			

OMINECA BIOPHYSICAL MAP LEGEND

Moderate	red-osier dogwood black gooseberry highbush-cranberry black cottonwood (red raspberry) (sedges)	red-osier dogwood black gooseberry highbush-cranberry black cottonwood (red raspberry) (sedges)	willows black twinberry red-osier dogwood highbush-cranberry prickly rose black gooseberry	black twinberry red-osier dogwood highbush-cranberry willows prickly rose black gooseberry	black twinberry red-osier dogwood highbush-cranberry willows prickly rose black gooseberry
Comments: Common occurrence along water courses but usually small in area. The habitat class lacks currants as described for the SBSmk1 unit and may have clasping twistedstalk, false Solomon's-seal, cow-parsnip, five-leaved bramble, mountain monkshood and wild sarsaparilla as minor associate species in older successional stands. Sedges may be an associate species on wet floodplain sites.					

SBSwk2 06
SH - Spruce - horsetail moist habitat class
subhygric to hygric (subhygric), medium to rich, receiving sites on inactive fluvial terraces & fluvial fans; also imperfectly-drained sites on gentle toe slopes and flats underlain by morainal/lacustrine blankets or organic veneers over fluvial/morainal/lacustrine deposits.

Map Symbol	*SH1*	SH2		SH4	SH5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of black twinberry willows mountain alder horsetails fireweed bluejoint	open stand of lodgepole pine hybrid spruce black twinberry willows mountain alder horsetails	closed forest of hybrid spruce lodgepole pine horsetails	closed forest of hybrid spruce horsetails *Hylocomium splendens* *Ptilium crista-castrensis* *Pleurozium schreberi* *Mnium* spp.	closed forest of hybrid spruce horsetails *Hylocomium splendens* *Ptilium crista-castrensis* *Pleurozium schreberi* *Mnium* spp.
Associates	highbush-cranberry red-osier dogwood black gooseberry prickly rose trailing raspberry bunchberry Sitka burnet	highbush-cranberry red-osier dogwood black gooseberry prickly rose trailing raspberry bunchberry Sitka burnet fireweed	black twinberry willows trailing raspberry bunchberry Sitka burnet tall bluebells	lodgepole pine subalpine fir black twinberry willows trailing raspberry bunchberry Sitka burnet tall bluebells	subalpine fir black spruce black twinberry willows trailing raspberry bunchberry Sitka burnet tall bluebells
Potential Forage for wild ungulates/ (grizzly bear) Abundant	black twinberry willows bluejoint (fireweed)	black twinberry willows (fireweed)			

OMINECA BIOPHYSICAL MAP LEGEND

Moderate	highbush-cranberry red-osier dogwood black gooseberry prickly rose trembling aspen	highbush-cranberry red-osier dogwood black gooseberry prickly rose trembling aspen (fireweed)	black twinberry willows highbush-cranberry black gooseberry red-osier dogwood	black twinberry willows highbush-cranberry black gooseberry red-osier dogwood	black twinberry willows highbush-cranberry black gooseberry red-osier dogwood
Comments: Uncommon distribution and not sampled in the study area. The habitat unit may have false Solomon's seal, cow-parsnip, mountain monkshood and wild sarsaparilla as minor associate species that are not described for the SBSmk1 unit.					

OMINECA BIOPHYSICAL MAP LEGEND

SBSwk2

BP - Black spruce - peat moss bog habitat class

(hygric) to subhygric, nutrient poor sites on organic blankets or plains; bogs develop in depressional landscape with high water tables; often located on the perimeter of sedge wetlands.

Map Symbol	
Characteristic plant species	
Dominants	open forest of black spruce Labrador tea scrub birch common horsetail *Sphagnum* spp. *Bryoria* spp.
Associates	willows sedges trailing raspberry water avens palmate coltʼs-foot *Mnium* spp.
Potential Forage for wild ungulates/(grizzly bear) Abundant	*Bryoria* spp.
Moderate	willows bluejoint (sedges) (arrow-leaved ragwort)
Comments: Common in distribution but usually small in size; very little successional variation and low diversity in this habitat unit; stunted black spruce trees often support high covers of arboreal lichens.	

OMINECA BIOPHYSICAL MAP LEGEND

SBSwk2

SE - Sedge wetland habitat class

shrub/sedge and forb dominated wetlands on subhydric sites in depression landscape with high water tables; underlain by organic blankets and veneers over fluvial or lacustrine deposits; riparian wet meadow & shrub swamp wetlands may also develop on mixtures of organic and mineral layers due to periodic flooding.

Map Symbol	SE1	*SE1*	*SE1*
Characteristic plant species	wet meadows	tall shrub swamp (transitional to SF1 habitat class)	fens/fens transitional to bogs
Dominants	lush herbaceous vegetation of sedges water avens great northern aster arrow-leaved ragwort Sitka burnet	shrub dominated cover of willows sedges water avens great northern aster arrow-leaved ragwort Sitka burnet	sedge/moss dominated cover of willows scrub birch sedges *Drepanocladus* spp. *Tomenthyphum nitens* *Sphagnum* spp.
Associates	bluejoint sorrel kneeling angelica trailing raspberry northern bedstraw *Mnium* spp.	red-osier dogwood black twinberry bluejoint sorrel trailing raspberry northern bedstraw horsetails	bog-laurel Sitka burnet buckbean marsh cinquefoil arrow-grass *Mnium* spp. *Calliergon* spp. *Aulacomnium palustre*
Potential Forage for wild ungulates/ (grizzly bear) Abundant	(sedges) (arrow-leaved ragwort)	willows (sedges) (arrow-leaved ragwort)	willows (sedges)

Moderate	bluejoint	red-osier dogwood black twinberry highbush-cranberry bluejoint prickly rose mannagrass	bluejoint
Comments: The habitat unit is uncommon in distribution and not extensive in area. It includes riparian wet meadows and shrub swamps, fens and fens transitional to bogs. A range of substrates and water chemistries produce a variety of plant communities. Although willows &/or sedges dominate in this habitat unit, meadows have a higher diversity of forbs and lack mosses, swamps have a higher diversity of shrubs, fens are dominated by willow, sedges and brown mosses, while fens transitional to bogs are dominated by peat moss and have shrubs characteristic of bogs as associate species.			

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmv3 01
FB - Subalpine fir - five-leaved bramble mesic habitat class
FBs- Subalpine fir - five-leaved bramble shallow soil habitat class
submesic to mesic sites on gently sloping to level terrain; sites occur on morainal blankets and veneers, glaciofluvial and (colluvial) blankets; low diversity of shrubs and herbs.

Map Symbol	FB1/FBs1	FB2/FBs2		FB4/FBs4	FB5/FBs5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of black huckleberry white-flowered rhododendron fireweed *Polytrichum* spp.	open stand of subalpine fir lodgepole pine black huckleberry white-flowered rhododendron fireweed	closed forest of subalpine fir lodgepole pine black huckleberry white-flowered rhododendron *Pleurozium schreberi* *Ptilium crista-castrensis*	closed forest of subalpine fir lodgepole pine Engelmann spruce black huckleberry white-flowered rhododendron *Pleurozium schreberi* *Ptilium crista-castrensis*	closed forest of subalpine fir Engelmann spruce black huckleberry white-flowered rhododendron *Pleurozium schreberi* *Ptilium crista-castrensis*
Associates	Sitka alder oval-leaved blueberry bunchberry five-leaved bramble heart-leaved arnica *Cladonia* spp.	Engelmann spruce Sitka alder oval-leaved blueberry bunchberry five-leaved bramble heart-leaved arnica *Polytrichum* spp.	Engelmann spruce Sitka alder oval-leaved blueberry bunchberry five-leaved bramble stiff club-moss *Hylocomium splendens* *Barbilophozia lycopodioides*	Sitka alder oval-leaved blueberry bunchberry five-leaved bramble heart-leaved arnica stiff club-moss *Hylocomium splendens* *Barbilophozia lycopodioides*	lodgepole pine Sitka alder oval-leaved blueberry bunchberry five-leaved bramble heart-leaved arnica stiff club-moss *Hylocomium splendens* *Barbilophozia lycopodioides*
Potential Forage for wild ungulates/ (grizzly bear) Abundant	(black huckleberry) (fireweed)	(black huckleberry) (fireweed)	(black huckleberry)	(black huckleberry)	(black huckleberry)

Moderate	western mountain-ash red elderberry (oval-leaved blueberry)	western mountain-ash (oval-leaved blueberry)	(oval-leaved blueberry)	western mountain-ash black gooseberry (oval-leaved blueberry) *Bryoria* spp.	western mountain-ash black gooseberry (oval-leaved blueberry) *Bryoria* spp.
Comments: Common and widespread habitat in the study area. Mountain-heathers may be associate species in this habitat unit at upper elevations of the ESSFmv3.					

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmv3 01

FBc - Subalpine fir - five-leaved bramble mesic, cool aspect habitat class

submesic to mesic sites on moderate to steep slopes with cool aspects; sites occur on morainal blankets and veneers, glaciofluvial and colluvial blankets; low diversity of shrubs and herbs.

Map Symbol	FB1		FB3	FB4	*FB5*
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of white-flowered rhododendron black huckleberry fireweed *Polytrichum* spp.	open stand of subalpine fir lodgepole pine white-flowered rhododendron black huckleberry fireweed	closed forest of subalpine fir lodgepole pine white-flowered rhododendron black huckleberry *Pleurozium schreberi* *Ptilium crista-castrensis*	closed forest of subalpine fir lodgepole pine Engelmann spruce white-flowered rhododendron black huckleberry *Pleurozium schreberi* *Ptilium crista-castrensis*	closed forest of subalpine fir Engelmann spruce white-flowered rhododendron black huckleberry *Pleurozium schreberi* *Ptilium crista-castrensis*
Associates	Sitka alder oval-leaved blueberry bunchberry five-leaved bramble heart-leaved arnica *Cladonia* spp.	Engelmann spruce Sitka alder oval-leaved blueberry bunchberry five-leaved bramble heart-leaved arnica *Polytrichum* spp.	Engelmann spruce Sitka alder oval-leaved blueberry bunchberry five-leaved bramble stiff club-moss *Hylocomium splendens* *Barbilophozia lycopodioides*	Sitka alder oval-leaved blueberry bunchberry five-leaved bramble heart-leaved arnica stiff club-moss *Hylocomium splendens* *Barbilophozia lycopodioides*	lodgepole pine Sitka alder oval-leaved blueberry bunchberry five-leaved bramble heart-leaved arnica stiff club-moss *Hylocomium splendens* *Barbilophozia lycopodioides*
Potential Forage for wild ungulates/ (grizzly bear) Abundant	(black huckleberry) (fireweed)	(black huckleberry) (fireweed)	(black huckleberry)	(black huckleberry)	(black huckleberry)

Moderate	western mountain-ash red elderberry (oval-leaved blueberry)	western mountain-ash (oval-leaved blueberry)	(oval-leaved blueberry)	western mountain-ash black gooseberry (oval-leaved blueberry) *Bryoria* spp.	western mountain-ash black gooseberry (oval-leaved blueberry) *Bryoria* spp.
Comments: Common and widespread habitat in the study area. Mountain-heathers may be associate species in this habitat unit at upper elevations of the ESSFmv3.					

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmv3

JK - Juniper - kinnikinnick, warm aspect, coarse-textured soil habitat class

xeric to (subxeric) sites on steep to very steep, warm, southeast to west facing slopes; sites with shallow, colluvial veneers over rock are usually associated with rock outcrops and bluffs; the habitat unit also occurs on very steep, warm slopes of coarse-textured glaciofluvial scarps; the driest sites in this unit have infrequent, scrubby trees.

Map Symbol	JK1	JK2	JK3	JK4	JK5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of common juniper kinnikinnick wild strawberry cut-leaved anemone asters	open stand of lodgepole pine subalpine fir Engelmann spruce common juniper kinnikinnick wild strawberry asters	open forest of lodgepole pine subalpine fir Engelmann spruce common juniper kinnikinnick	open forest of lodgepole pine subalpine fir Engelmann spruce common juniper kinnikinnick	closed forest of lodgepole pine subalpine fir Engelmann spruce common juniper kinnikinnick
Associates	trembling aspen soopolallie prickly rose saskatoon Scouler's willow red columbine	trembling aspen soopolallie prickly rose saskatoon Scouler's willow cut-leaved anemone	trembling aspen soopolallie prickly rose saskatoon wild strawberry showy aster wildrye	soopolallie prickly rose saskatoon wild strawberry showy aster wildrye	soopolallie prickly rose saskatoon wild strawberry showy aster wildrye
Potential Forage for wild ungulates Abundant					

Moderate	trembling aspen prickly rose saskatoon Scouler's willow wildrye	trembling aspen prickly rose saskatoon Scouler's willow wildrye	prickly rose saskatoon wildrye	prickly rose saskatoon wildrye	prickly rose saskatoon wildrye
Comments: Uncommon distribution and usually small in area. Common juniper may be dominant on calcareous parent materials. Showy Jacob's ladder and three-toothed saxifrage are associate species on very dry, rocky sites that support only shrub vegetation. This unit is similar to the RK habitat unit of lower elevations.					

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmv3 02

FC - Subalpine fir - crowberry shedding habitat class

(xeric) subxeric to submesic sites on dry, shedding ridgetops; sites occur on shallow, coarse-textured soils formed on morainal /colluvial veneers over rock; dry, open forests with trees and understory species of moderate to poor vigour.

Map Symbol	FC1	FC2	FC3	FC4	FC5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of white-flowered rhododendron black huckleberry *Cladonia* spp. *Polytrichum* spp.	open stand of lodgepole pine white-flowered rhododendron black huckleberry *Cladonia* spp.	open forest of lodgepole pine subalpine fir white-flowered rhododendron black huckleberry *Dicranum* spp. *Cladonia* spp.	open forest of subalpine fir lodgepole pine white-flowered rhododendron black huckleberry *Dicranum* spp. *Pleurozium schreberi*	open forest of subalpine fir white-flowered rhododendron black huckleberry *Dicranum* spp. *Pleurozium schreberi*
Associates	lodgepole pine subalpine fir fireweed crowberry dwarf blueberry	subalpine fir Engelmann spruce crowberry dwarf blueberry fireweed *Polytrichum* spp.	Engelmann spruce crowberry bunchberry dwarf blueberry ground-cedar *Cladina* spp.	Engelmann spruce crowberry bunchberry dwarf blueberry ground-cedar *Cladina* spp. *Cladonia* spp.	Engelmann spruce crowberry bunchberry dwarf blueberry ground-cedar *Cladina* spp. *Cladonia* spp.
Potential Forage for wild ungulates/ (grizzly bear) Abundant	(black huckleberry)	(black huckleberry)	(black huckleberry)	(black huckleberry)	(black huckleberry)

Moderate	(fireweed)	(fireweed)	*Cladina* spp. *Stereocaulon* spp.	*Cladina* spp. *Stereocaulon* spp. *Bryoria* spp.	*Cladina spp.* *Stereocaulon spp.* *Bryoria* spp.
Comments: Fairly common distribution in mountainous areas. Upper slopes and scarps are split into warm and cool aspect phases. Ridgetop habitats with gentle slopes do not have a phase designation. Common juniper and kinnikinnick may be associate species on dry ridgetops. White-flowered rhododendron is more dominant than huckleberry on moister ridges.					

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmv3 02

FCc - Subalpine fir - crowberry shedding, cool aspect habitat class

(xeric) subxeric to submesic sites on dry, shedding upper slopes and scarps with cool aspects; sites occur on shallow, coarse-textured soils formed on morainal and colluvial veneers over rock and on coarse-textured soils of steep glaciofluvial scarps; dry, open forests with trees and understory species of moderate to poor vigour.

Map Symbol	FCc1	FCc2	FCc3	FCc4	FCc5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of white-flowered rhododendron black huckleberry *Cladonia* spp. *Polytrichum* spp.	open stand of subalpine fir lodgepole pine white-flowered rhododendron black huckleberry *Cladonia* spp.	open to closed forest of subalpine fir lodgepole pine white-flowered rhododendron black huckleberry *Dicranum* spp. *Cladonia* spp. *Pleurozium schreberi*	closed forest of subalpine fir lodgepole pine white-flowered rhododendron black huckleberry *Dicranum* spp. *Pleurozium schreberi*	closed forest of subalpine fir lodgepole pine Engelmann spruce white-flowered rhododendron black huckleberry *Dicranum* spp. *Pleurozium schreberi*
Associates	lodgepole pine subalpine fir fireweed crowberry dwarf blueberry mountain-heathers	Engelmann spruce crowberry dwarf blueberry fireweed mountain-heathers *Polytrichum* spp.	Engelmann spruce crowberry bunchberry dwarf blueberry stiff club-moss mountain-heathers *Cladina* spp.	Engelmann spruce crowberry bunchberry dwarf blueberry stiff club-moss mountain-heathers *Cladina* spp. *Cladonia* spp.	crowberry bunchberry dwarf blueberry stiff club-moss mountain-heathers *Cladina* spp. *Cladonia spp.*
Potential Forage for wild ungulates/ (grizzly bear) Abundant	(black huckleberry)	(black huckleberry)	(black huckleberry)	(black huckleberry)	(black huckleberry)

Moderate	(fireweed)	(fireweed)	*Cladina* spp. *Stereocaulon* spp.	*Cladina* spp. *Stereocaulon* spp. *Bryoria* spp.	*Cladina* spp. *Stereocaulon* spp. *Bryoria* spp.
Comments: Fairly common distribution in mountainous areas. Upper slopes and scarps are split into warm and cool aspect phases. Ridgetop habitats with gentle slopes do not have a phase designation. White-flowered rhododendron is more dominant than huckleberry on moister ridges and cool upper slopes.					

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmv3 02
FCw - Subalpine fir - crowberry shedding, warm aspect habitat class
(xeric) subxeric to submesic sites on dry, shedding upper slopes and scarps with warm, southeast to west exposures; sites occur on shallow, coarse-textured soils formed on morainal and colluvial veneers over rock and on coarse-textured soils of steep glaciofluvial scarps; dry, open forests with trees and understory species of moderate to poor vigour.

Map Symbol	FCw1	FCw2	FCw3	FCw4	FCw5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of black huckleberry *Cladonia* spp. *Polytrichum* spp.	open stand of lodgepole pine black huckleberry *Cladonia* spp.	open forest of lodgepole pine subalpine fir black huckleberry *Dicranum* spp. *Cladonia* spp.	open forest of lodgepole pine subalpine fir Engelmann spruce black huckleberry *Dicranum* spp. *Pleurozium schreberi*	open forest of subalpine fir Engelmann spruce lodgepole pine black huckleberry *Dicranum* spp. *Pleurozium schreberi*
Associates	lodgepole pine subalpine fir white-flowered rhododendron fireweed crowberry dwarf blueberry	subalpine fir Engelmann spruce white-flowered rhododendron crowberry dwarf blueberry fireweed *Polytrichum* spp.	Engelmann spruce white-flowered rhododendron crowberry bunchberry dwarf blueberry ground-cedar *Cladina* spp.	white-flowered rhododendron crowberry bunchberry dwarf blueberry ground-cedar *Cladina* spp. *Cladonia* spp.	white-flowered rhododendron crowberry bunchberry dwarf blueberry ground-cedar *Cladina* spp. *Cladonia* spp.
Potential Forage for wild ungulates/ (grizzly *bear*) Abundant	(black huckleberry)	(black huckleberry)	(black huckleberry)	(black huckleberry)	(black huckleberry)

Moderate	(fireweed)	(fireweed)	*Cladina* spp. *Stereocaulon* spp.	*Cladina* spp. *Stereocaulon* spp. *Bryoria* spp.	*Cladina spp.* *Stereocaulon spp.* *Bryoria spp.*
Comments: Fairly common distribution in mountainous areas. Upper slopes and scarps are split into warm and cool aspect phases. Ridgetop habitats with gentle slopes do not have a phase designation. Black huckleberry is the dominant shrub on warm aspects. Common juniper and kinnikinnick may be associate species on warm upper slopes and dry ridgetops.					

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmv3

LF - Lichen - Altai fescue grassland habitat class

subxeric, cold air pooling sites in high subalpine valley bottoms; dry, nutrient-poor soils on coarse-textured glaciofluvial deposits; sites with low productivity; infrequent, scrub trees.

Map Symbol	LF1
Characteristic plant species	
Dominants	lichen/herb dominated cover of Altai fescue mountain sage dwarf blueberry *Cladonia* spp. crustose lichens
Associates	mountain-heathers crowberry small-flowered woodrush aster *Stereocaulon* spp. *Cladina* spp.
Potential Forage for wild ungulates Abundant	Altai fescue
Moderate	*Stereocaulon* spp. *Cladina* spp.
Comments: This habitat unit is very limited in extent and usually occurs in a mosaic with subalpine moist meadows and wetlands in valley bottoms with cold air pooling.	

ESSFmv3 02

PCt - Lodgepole pine - Cladina lichen coarse-textured soil, terrace habitat class

subxeric to (submesic), poor nutrient sites on level to gently sloping, coarse-textured, glaciofluvial terraces and plains; low productivity sites with small diameter lodgepole pine and sparse shrubs and herbs.

Map Symbol	PCt1	PCt2		PCt4	PCt5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	lichen dominated cover of *Cladonia* spp.	open stand of lodgepole pine *Cladonia* spp.	open forest of lodgepole pine *Pleurozium schreberi* *Cladina* spp. *Cladonia* spp.	open forest of lodgepole pine black huckleberry *Pleurozium schreberi* *Cladina* spp. *Cladonia* spp.	open forest of subalpine fir Engelmann spruce black huckleberry *Pleurozium schreberi* *Cladina* spp. *Cladonia* spp.
Associates	black huckleberry scrub birch lodgepole pine fireweed crowberry dwarf blueberry ground-cedar *Polytrichum* spp.	black huckleberry scrub birch crowberry dwarf blueberry ground-cedar fireweed *Polytrichum* spp.	black huckleberry scrub birch subalpine fir crowberry bunchberry dwarf blueberry	subalpine fir Engelmann spruce scrub birch crowberry bunchberry dwarf blueberry	lodgepole pine scrub birch crowberry bunchberry dwarf blueberry
Potential Forage for wild ungulates/ (grizzly bear) Abundant			*Cladina* spp.	(black huckleberry) *Cladina* spp.	(black huckleberry) *Cladina* spp.
Moderate	(black huckleberry) (fireweed)	(black huckleberry) (fireweed)	(black huckleberry)		

Comments: Uncommon distribution; more prevalent at lower elevations of ESSF. This unit is similar to the PLt habitat units of the SBS and BWBS subzones with the exception that crowberry is common in the ESSF unit. Subalpine fir & Engelmann spruce may be dominants at higher elevations in the ESSF. Altai fescue, mountain sage and mountain-heathers may be associate species at higher subalpine elevations.

ESSFmv3 01
FH - Subalpine fir - black huckleberry warm aspect habitat class
FHs- Subalpine fir - black huckleberry warm aspect, shallow soil habitat class
submesic to (mesic) sites on moderate to steep slopes with warm, southeast to west aspects; medium to coarse-textured morainal blankets and veneers, colluvial blankets/(veneers) and glaciofluvial deposits.

Map Symbol	FH1/FHs1	FH2/FHs2	FH3/FHs3	FH4/FHs4	FH5/FHs5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of black huckleberry Sitka alder fireweed *Polytrichum* spp. *Cladonia* spp.	open stand of lodgepole pine black huckleberry Sitka alder fireweed *Polytrichum* spp.	closed forest of lodgepole pine black huckleberry *Pleurozium schreberi* *Ptilium crista-castrensis*	closed forest of lodgepole pine subalpine fir Engelmann spruce black huckleberry *Pleurozium schreberi* *Ptilium crista-castrensis*	closed forest of subalpine fir Engelmann spruce black huckleberry *Pleurozium schreberi* *Ptilium crista-castrensis*
Associates	Scouler's willow bunchberry heart-leaved arnica twinflower bluejoint northern bedstraw	subalpine fir Engelmann spruce Scouler's willow bunchberry heart-leaved arnica twinflower *Cladonia* spp.	subalpine fir Engelmann spruce Sitka alder bunchberry heart-leaved arnica twinflower	Sitka alder bunchberry heart-leaved arnica twinflower western meadowrue one-sided wintergreen	lodgepole pine Sitka alder bunchberry heart-leaved arnica twinflower western meadowrue one-sided wintergreen
Potential Forage for wild ungulates/ (grizzly bear) Abundant	(black huckleberry) (fireweed)	(black huckleberry) (fireweed)	(black huckleberry)	(black huckleberry)	(black huckleberry)
Moderate	Scouler's willow western mountain-ash bluejoint	Scouler's willow western mountain-ash bluejoint		western mountain-ash	western mountain-ash

Comments: Common distribution in the study area. Trembling aspen, soopolallie, prickly rose and common juniper may be associate species at lower elevations and on drier sites transitional to the JK habitat unit. Mountain-heathers may be associate species in this unit in the upper subalpine elevations.

ESSFmv3 03

BT - Black spruce - Labrador tea poor nutrient soil habitat class

submesic to subhygric sites on level terrain; moderately to imperfectly-drained, poor-nutrient, soils on morainal blankets; low productivity sites; low diversity of shrubs or herbs.

Map Symbol	BT1	BT2	BT3	BT4	BT5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of white-flowered rhododendron soopolallie fireweed	open stand of lodgepole pine white-flowered rhododendron soopolallie fireweed	closed forest of lodgepole pine black spruce *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*	closed forest of lodgepole pine black spruce soopolallie *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*	closed forest of lodgepole pine black spruce soopolallie *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*
Associates	Labrador tea lodgepole pine bunchberry heart-leaved arnica twinflower lingonberry	Labrador tea black spruce bunchberry heart-leaved arnica twinflower lingonberry	white-flowered rhododendron soopolallie Labrador tea Engelmann spruce subalpine fir bunchberry twinflower	Engelmann spruce subalpine fir white-flowered rhododendron Labrador tea bunchberry heart-leaved arnica twinflower	Engelmann spruce subalpine fir white-flowered rhododendron Labrador tea bunchberry heart-leaved arnica twinflower
Potential Forage for wild ungulates/ (grizzly bear) Abundant	(soopolallie) (fireweed)	(soopolallie) (fireweed)		(soopolallie)	(soopolallie)
Moderate			(soopolallie)		

Comments: Rare distribution. This unit was not sampled in the study area but can be observed on air photos and mapped using forest cover map timber types to locate lodgepole pine - black spruce stands. Vegetation lists were derived from MacKinnon, A. et al, 1990. "A Field Guide for Identification and Interpretation of Ecosystems of the Northwest Portion of the Prince George Forest Region". B.C. Forest Service, Prince George, B.C.

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmv3
WCc - Willow - cow-parsnip avalanche chute cool aspect habitat class
mesic to subhygric sites on colluvial blankets and fans of active avalanche chutes on northwest to east facing slopes; sites are shrub dominated with herbaceous openings.

Map Symbol	WCc1
Characteristic plant species	
Dominants	shrub dominated cover (with herbaceous openings) of willows Sitka alder bluejoint cow-parsnip mountain monkshood
Associates	Engelmann spruce northern black currant trailing raspberry fireweed arrow-leaved ragwort Sitka valerian sedges *Mnium* spp.
Potential Forage for wild ungulates/(grizzly bear) Abundant	willows bluejoint (cow-parsnip)
Moderate	(northern black currant) (fireweed) (arrow-leaved ragwort) (Sitka valerian) (sedges)
Comments: This habitat unit was not sampled in the study area. The vegetation list is derived from Clement, C. 1990. "Biophysical Habitat Units of the Ospika River Drainage." Fletcher Challenge Canada Ltd., Woodland Division, MacKenzie. Avalanche chutes provide spring and summer habitat for grizzly bears.	

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmv3
WCw - Willow - cow-parsnip avalanche chute warm aspect habitat class
mesic to subhygric sites on colluvial blankets and fans of active avalanche chutes on southeast to west facing slopes; sites are shrub dominated with herbaceous openings.

Map Symbol	WCw1
Characteristic plant species	
Dominants	shrub dominated cover (with herbaceous openings) of willows Sitka alder bluejoint cow-parsnip mountain monkshood
Associates	Engelmann spruce northern black currant trailing raspberry fireweed arrow-leaved ragwort Sitka valerian sedges *Mnium* spp.
Potential Forage for wild ungulates/(grizzly bear) Abundant	willows bluejoint (cow-parsnip)
Moderate	(northern black currant) (fireweed) (arrow-leaved ragwort) (Sitka valerian) (sedges)
Comments: This habitat unit was not sampled in the study area. The vegetation list is derived from Clement, C. 1990. "Biophysical Habitat Units of the Ospika River Drainage." Fletcher Challenge Canada Ltd., Woodland Division, MacKenzie. Avalanche chutes provide spring and summer habitat for grizzly bears.	

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmv3 04

FO - Subalpine fir - oakfern moist habitat class

mesic to subhygric sites on mid to lower slopes receiving temporary seepage; moderate to steep, mid to lower slopes with cool aspects and gentle lower slopes with variable aspects; parent materials are often morainal but sites may also occur in lower slope positions of glaciofluvial or colluvial blankets; sites have a high diversity of shrubs & forbs.

Map Symbol	FO1	FO2	FO3	FO4	FO5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub & forb dominated cover of white-flowered rhododendron black twinberry oak fern fireweed wood horsetail	open stand of subalpine fir Engelmann spruce white-flowered rhododendron black twinberry oak fern fireweed	closed forest of subalpine fir Engelmann spruce white-flowered rhododendron black huckleberry oak fern *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*	closed forest of subalpine fir Engelmann spruce white-flowered rhododendron black huckleberry oak fern *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*	closed fores of subalpine fir Engelmann spruce white-flowered rhododendron black huckleberry oak fern *Pleurozium schreberi* *Ptilium crista-castrensis* *Hylocomium splendens*
Associates	willows black huckleberry bluejoint Sitka valerian Indian hellebore clasping twisted-stalk western meadowrue *Polytrichum* spp.	lodgepole pine willows black huckleberry bluejoint Sitka valerian Indian hellebore clasping twisted-stalk western meadowrue	lodgepole pine oval-leaved blueberry five-leaved bramble Sitka valerian three-leaved foamflower bunchberry Indian hellebore *Barbilophozia lycopodioides*	lodgepole pine oval-leaved blueberry black gooseberry five-leaved bramble Sitka valerian three-leaved foamflower bunchberry Indian hellebore *Barbilophozia lycopodioides*	oval-leaved blueberry black goose berry five-leaved bramble Sitka valeri n three-leave foamflower bunchberry Indian helle ore *Barbilophozi a* *lycopodioid s*

Potential Forage for wild ungulates/ (grizzly bear) Abundant	black twinberry	black twinberry	(black huckleberry)	(black huckleberry)	(black huckleberry)
Moderate	black gooseberry (black huckleberry) (oval-leaved blueberry) willows bluejoint (Sitka valerian) (Indian hellebore) (arrow-leaved ragwort) (purple sweet-cicely)	black gooseberry (black huckleberry) (oval-leaved blueberry) willows bluejoint (Sitka valerian) (indian hellebore)	black gooseberry black twinberry (oval-leaved blueberry) (Sitka valerian) (Indian hellebore)	black gooseberry black twinberry (oval-leaved blueberry) (Sitka valerian) (Indian hellebore)	black gooseberry black twinberry (oval-leaved blueberry) (Sitka valerian) (Indian hellebore)
Comments: Fairly common distribution on the landscape; the site often occurs on landforms with concave surface shapes such as gentle bowls and lower slopes where seepage water is concentrated.					

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmv3 05
FD - Subalpine fir - devil's club moist habitat class
subhygric sites on lower, toe or level slope positions receiving seepage and in gullies; stands usually open and dominated by robust, vigorous shrubs.

Map Symbol	FD1	FD2	FD3	FD4	FD5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub & forb dominated cover of white-flowered rhododendron devil's club oak fern lady fern fireweed bluejoint	open stand of Engelmann spruce subalpine fir white-flowered rhododendron devil's club oak fern lady fern fireweed	open forest of Engelmann spruce subalpine fir white-flowered rhododendron devil's club oak fern lady fern *Mnium* spp.	open forest of Engelmann spruce subalpine fir white-flowered rhododendron devil's club oak fern lady fern *Mnium* spp. *Pleurozium schreberi*	open forest of Engelmann spruce subalpine fir white-flowered rhododendron devil's club oak fern lady fern *Pleurozium schreberi* *Mnium* spp.
Associates	Sitka alder highbush-cranberry bluejoint Sitka valerian three-leaved foamflower trailing raspberry Indian hellebore	Sitka alder highbush-cranberry bluejoint Sitka valerian three-leaved foamflower trailing raspberry Indian hellebore *Mnium* spp.	black gooseberry Sitka alder Sitka valerian three-leaved foamflower bunchberry five-leaved bramble trailing raspberry *Pleurozium schreberi*	black gooseberry Sitka alder Sitka valerian three-leaved foamflower bunchberry five-leaved bramble trailing raspberry *Ptilium crista-castrensis*	black gooseberry Sitka alder Sitka valerian three-leaved foamflower bunchberry five-leaved bramble trailing raspberry *Ptilium crista-castrensis*
Potential Forage for wild ungulates/ (grizzly bear) Abundant	bluejoint (fireweed)	(fireweed)			

OMINECA BIOPHYSICAL MAP LEGEND

Moderate	highbush-cranberry black gooseberry western mountain-ash (black huckleberry) (oval-leaved blueberry) (Sitka valerian) (Indian hellebore) (purple sweet-cicely)	highbush-cranberry black gooseberry western mountain-ash (black huckleberry) (oval-leaved blueberry) bluejoint (Sitka valerian) (Indian hellebore) (purple sweet-cicely)	black gooseberry highbush-cranberry western mountain-ash (black huckleberry) (oval-leaved blueberry) (Sitka valerian) (Indian hellebore) (purple sweet-cicely)	black gooseberry highbush-cranberry western mountain-ash (black huckleberry) (oval-leaved blueberry) (Sitka valerian) (Indian hellebore) (purple sweet-cicely)	black gooseberry highbush-cranberry western mountain-ash (black huckleberry) (oval-leaved blueberry) (Sitka valerian) (Indian hellebore) (purple sweet-cicely)
Comments: Uncommon distribution.					

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmv3
VR - Sitka valerian - arrow-leaved ragwort moist meadow habitat class
subhygric sites in gentle to moderate slope positions underlain by morainal, fluvial or colluvial blankets; rich, herbaceous unit with a diversity of plant species in moist meadows.

Map Symbol	VR1
Characteristic plant species	
Dominants	lush forb meadow of Sitka valerian arrow-leaved ragwort subalpine daisy mountain arnica Indian hellebore *Brachythecium* spp. *Mnium* spp.
Associates	subalpine fir willow mountain monkshood mountain hair-grass white marsh-marigold Sitka burnet
Potential Forage for wild ungulates/(grizzly bear) Abundant	(Sitkavalerian) (arrow-leaved ragwort) (Indian hellebore)
Moderate	mountain hair-grass alpine timothy fowl bluegrass bluejoint (sedges) (purple sweet-cicely) (cow-parsnip)
Comments: This habitat class provides summer forage for grizzly bears.	

ESSFmv3 07
EF - Engelmann spruce floodplain habitat class
subhygric to hygric sites on fluvial deposits of active floodplains; most sites are subject to periodic inundation; mature forests are often a mosaic of tree clumps and shrubs/herbs dominated openings.

Map Symbol	EF1	EF2	EP3	EF4	EF5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of mountain alder willows black twinberry common horsetail bluejoint	open stand of Engelmann spruce mountain alder willows black twinberry common horsetail	open forest of Engelmann spruce mountain alder common horsetail	open forest of Engelmann spruce mountain alder common horsetail	open forest of Engelmann spruce mountain alder common horsetail *Pleurozium schreberi* *Ptilium crista-castrensis* *Brachythecium* sp.
Associates	red-osier dogwood Sitka burnet palmate colt's-foot trailing raspberry tall bluebells marsh violet northern bedstraw	red-osier dogwood bluejoint Sitka burnet palmate colt's-foot trailing raspberry tall bluebells	willows black twinberry red-osier dogwood Sitka burnet palmate colt's-foot trailing raspberry tall bluebells	red-osier dogwood black twinberry Sitka burnet palmate colt's-foot trailing raspberry tall bluebells	subalpine fir black gooseberry highbush-cranberry Sitka burnet palmate colt's-foot trailing raspberry tall bluebells
Potential Forage for wild ungulates Abundant	willows black twinberry bluejoint	willows black twinberry			
Moderate	red-osier dogwood	red-osier, dogwood bluejoint	willows black twinberry red-osier dogwood	red-osier dogwood black twinberry	highbush-cranberry red-osier dogwood black twinberry

Comments: Uncommon distribution and limited extent; found only in lower elevations of ESSF; One floodplain site sampled in the study area was in a transitional zone between the SBSwk2 and the ESSFmv3. Other information used to create the vegetation lists was taken from MacKinnon, A. et al, 1990. "A Field Guide for Identification and Interpretation of Ecosystems of the Northwest Portion of the Prince George Forest Region". B.C. Forest Service, Prince George, B.C.

ESSFmv3 07,(06)

EH - Engelmann spruce - horsetail moist habitat class

subhygric to hygric sites in level or depressional slope positions where water table is at or near surface; sites occur on inactive fluvial terraces or plains, lacustrine or glaciofluvial blankets, and organic veneers over mineral deposits.

Map Symbol	EH1	EH2	EH3	EH4	EH5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forests	Mature Forests	Old-growth
Dominants	shrub dominated cover of black twinberry alders willows horsetails fireweed bluejoint	open stand of Engelmann spruce black twinberry alders willows horsetails fireweed bluejoint	open forest of Engelmann spruce horsetails *Pleurozium schreberi* *Ptilium crista-castrensis*	open forest of Engelmann spruce horsetails *Pleurozium schreberi* *Ptilium crista-castrensis*	open forest of Engelmann spruce horsetails *Pleurozium schreberi* *Ptilium crista-castrensis*
Associates	highbush-cranberry black gooseberry Sitka burnet trailing raspberry palmate colt's-foot tall bluebells bedstraws	lodgepole pine highbush-cranberry black gooseberry Sitka burnet trailing raspberry palmate colt's-foot tall bluebells bedstraws	lodgepole pine subalpine fir black twinberry alders willows Sitka burnet trailing raspberry bunchberry	lodgepole pine subalpine fir black gooseberry highbush-cranberry Sitka burnet trailing raspberry bunchberry	lodgepole pine subalpine fir black gooseberry highbush-cranberry Sitka burnet trailing raspberry bunchberry
Potential Forage for wild ungulates/ (grizzly bear) Abundant	black twinberry willows bluejoint	black twinberry willows bluejoint			

Moderate	highbush-cranberry black gooseberry	highbush-cranberry black gooseberry	black twinberry willows highbush-cranberry black gooseberry	black gooseberry highbush-cranberry black twinberry	black gooseberry highbush-cranberry black twinberry
Comments: Uncommon distribution in the study area.					

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmv3

BP - Black spruce - peat moss bog habitat class

(hygric) to subhygric, nutrient poor sites on organic blankets or plains; bogs develop in depressional areas with water tables at or near the surface.

Map Symbol	BP 1-5
Characteristic plant species	
Dominants	open, stunted forest of black spruce willows horsetails creeping-snowberry *Sphagnum* spp. *Bryoria* spp.
Associates	Labrador tea sedges *Tomenthypnum nitens* *Hylocomium splendens* *Aulacomnium palustre*
Potential Forage for wildungulates/(grizzlybear) Abundant	willows *Bryoria* spp.
Moderate	(sedges)
Comments: Uncommon distribution at lower subalpine elevations. There is very little successional variation and low diversity of species in this habitat class. Stunted black spruce trees often support high covers of arboreal lichens.	

ESSFmv3

WS - Willow - sedge wetland habitat class

shrub and/or sedge dominated subhygric wetlands in depressional sites with high water tables; wet meadows, fens and non-forested bogs found on organic veneers (>15cm thick) and blankets.

Map Symbol	WS1	WS1
Characteristic plant species	wet meadows/fens	fens transitional to bogs
Dominants	lush herbaceous vegetation of sedges bluejoint arrow-leaved ragwort alpine timothy *Tomenthypnum nitens* *Drepanocladus* sp. *Calliergon* sp.	herb/moss cover of willows scrub birch sedges *Sphagnum* spp. *Aulacomnium palustre* *Calliergon* sp.
Associates	large-leaved avens mountain hair-grass garden sorrel dwarf nagoonberry asters Sitka burnet rayless alpine butterweed purple-leaved willowherb alpine arnica *Mnium* spp.	bog-laurel rush Sitka burnet arrow-leaved ragwort leatherleaf saxifrage asters dwarf nagoonberry *Mnium* spp.
Potential Forage for wild ungulates/(grizzly bear) Abundant	bluejoint alpine timothy (sedges) (arrow-leaved ragwort)	willows (sedges)
Moderate	mountain hair-grass bluegrass	slender wheatgrass bluegrass alpine timothy bluejoint (arrow-leaved ragwort)

Comments: Wet meadows & fens differ from fens transitional to bogs mainly with respect to shrubs and mosses. Wet meadows & fens are associated with more mineral-rich water of riparian areas and calcium-rich sites; bog wetlands are associated with nutrient-poor sites where water movement is restricted such as in depressional landscapes. Wet meadows and fens are common along water courses; bogs are scattered across the landscape & not extensive in area.

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmvp3
FM - Subalpine fir - white mountain-heather mesic habitat class
submesic to mesic sites on gentle to moderate slopes underlain by morainal/colluvial blankets and veneers; sites support a mosaic of stunted tree clumps and dwarf shrub or herb dominated openings.

Map Symbol		FM2	FM3	FM4	FM5
Characteristic plant species	Shrub-herb)	Pole-Sapling	Young Forest	Mature Forest	Old-Growth
Dominants	dwarf shrub dominated cover of white mountain-heather crowberry dwarf blueberry crustose lichens *Cladonia* spp.	open stand of subalpine fir Engelmann spruce white mountain-heather crowberry dwarf blueberry crustose lichens *Cladonia* spp.	parkland forest of subalpine fir Engelmann spruce white mountain-heather crowberry crustose lichens *Dicranum* spp.	parkland forest of subalpine fir Engelmann spruce white mountain-heather crowberry crustose lichens *Dicranum* spp.	parkland forest of subalpine fir Engelmann spruce white mountain-heather crowberry crustose lichens *Dicranum* spp.
Associates	Altai fescue mountain sage Sitka Valerian subalpine daisy mountain arnica slender hawkweed mountain monkshood arctic lupine	Altai fescue mountain sage Sitka Valerian subalpine daisy mountain arnica slender hawkweed mountain monkshood arctic lupine	dwarf blueberry Sitka Valerian subalpine daisy mountain sage Altai fescue mountain arnica arctic lupine *Cladonia* spp.	dwarf blueberry Sitka Valerian subalpine daisy mountain sage Altai fescue mountain arnica arctic lupine *Cladonia* spp.	dwarf blueberry Sitka Valerian subalpine daisy mountain sage Altai fescue mountain arnica arctic lupine *Cladonia* spp.
Potential Forage for wild ungulates/ (grizzly bear) Abundant					

OMINECA BIOPHYSICAL MAP LEGEND

Moderate	Altai fescue mountain hair-grass alpine bluegrass arctic bluegrass (Sitka valerian) *Cetraria* spp.	Altai fescue mountain hair-grass alpine bluegrass arctic bluegrass (Sitka valerian) *Cetraria* spp.	Altai fescue mountain hair-grass alpine bluegrass arctic bluegrass (Sitka valerian) *Cetraria* spp.	Altai fescue mountain hair-grass alpine bluegrass arctic bluegrass (Sitka valerian) *Cetraria* spp.	Altai fescue mountain hair-grass alpine bluegrass arctic bluegrass (Sitka valerian) *Cetraria* spp.
Comments: Little successional variation from shrub-herb phase to forested phases; parkland sites at lower elevations have a more closed canopy and a higher component of Engelmann spruce; moister sites have lower covers of dwarf shrubs & lichens and higher diversity & cover of herbs.					

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmvp3

FMc - Subalpine fir - white mountain-heather cool aspect

submesic to mesic sites on steep slopes with cool aspects underlain by morainal/colluvial blankets and veneers; sites support a mosaic of stunted tree clumps and dwarf shrub or herb dominated openings.

Map Symbol	FMc1	FMc2	FMc3	FMc4	FMc5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forest	Mature Forest	Old-Growth
Dominants	dwarf shrub dominated cover of white mountain-heather crowberry dwarf blueberry crustose lichens *Cladonia* spp.	open stand of subalpine fir Engelmann spruce white mountain-heather crowberry dwarf blueberry crustose lichens *Cladonia* spp.	parkland forest of subalpine fir Engelmann spruce white mountain-heather crowberry crustose lichens *Dicranum* spp.	parkland forest of subalpine fir Engelmann spruce white mountain-heather crowberry crustose lichens *Dicranum* spp.	parkland forest of subalpine fir Engelmann spruce white mountain-heather crowberry crustose lichens *Dicranum* spp.
Associates	Altai fescue mountain sage Sitka Valerian subalpine daisy mountain arnica slender hawkweed mountain monkshood arctic lupine	Altai fescue mountain sage Sitka Valerian subalpine daisy mountain arnica slender hawkweed mountain monkshood arctic lupine	dwarf blueberry Sitka Valerian subalpine daisy mountain sage Altai fescue mountain arnica arctic lupine *Cladonia* spp.	dwarf blueberry Sitka Valerian subalpine daisy mountain sage Altai fescue mountain arnica arctic lupine *Cladonia* spp.	dwarf blueberry Sitka Valerian subalpine daisy mountain sage Altai fescue mountain arnica arctic lupine *Cladonia* spp.
Potential Forage for wild ungulates/ (grizzly bear) Abundant					

Moderate	Altai fescue mountain hair-grass alpine bluegrass arctic bluegrass (Sitka valerian) *Cetraria* spp.	Altai fescue mountain hair-grass alpine bluegrass arctic bluegrass (Sitka valerian) *Cetraria* spp.	Altai fescue mountain hair-grass alpine bluegrass arctic bluegrass (Sitka valerian) *Cetraria* spp.	Altai fescue mountain hair-grass alpine bluegrass arctic bluegrass (Sitka valerian) *Cetraria* spp.	Altai fescue mountain hair-grass alpine bluegrass arctic bluegrass (Sitka valerian) *Cetraria* spp.
Comments: Little successional variation from shrub-herb phase to forested phases; parkland sites at lower elevations have a more closed canopy and a higher component of Engelmann spruce; moister sites have lower covers of dwarf shrubs & lichens and higher diversity & cover of herbs. *Drepanocladus uncinatus* may be an associate species on cool north aspects.					

ESSFmvp3

FMw - Subalpine fir - white mountain-heather warm aspect

submesic to mesic sites on steep slopes with warm aspects underlain by morainal/colluvial blankets and veneers; sites support a mosaic of stunted tree clumps and dwarf shrub or herb dominated openings.

Map Symbol	FMw1	FMw2	FMw3	FMw4	FMw5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forest	Mature Forest	Old-Growth
Dominants	dwarf shrub dominated cover of white mountain-heather crowberry dwarf blueberry crustose lichens *Cladonia* spp.	open stand of subalpine fir Engelmann spruce white mountain-heather crowberry dwarf blueberry crustose lichens *Cladonia* spp.	parkland forest of subalpine fir Engelmann spruce white mountain-heather crowberry crustose lichens *Dicranum* spp.	parkland forest of subalpine fir Engelmann spruce white mountain-heather crowberry crustose lichens *Dicranum* spp.	parkland forest of subalpine fir Engelmann spruce white mountain-heather crowberry crustose lichens *Dicranum* spp.
Associates	Altai fescue mountain sage Sitka Valerian subalpine daisy mountain arnica slender hawkweed mountain monkshood arctic lupine	Altai fescue mountain sage Sitka Valerian subalpine daisy mountain arnica slender hawkweed mountain monkshood arctic lupine	dwarf blueberry Sitka Valerian subalpine daisy mountain sage Altai fescue mountain arnica arctic lupine *Cladonia* spp.	dwarf blueberry Sitka Valerian subalpine daisy mountain sage Altai fescue mountain arnica arctic lupine *Cladonia* spp.	dwarf blueberry Sitka Valerian subalpine daisy mountain sage Altai fescue mountain arnica arctic lupine *Cladonia* spp.
Potential Forage for wild ungulates/ (grizzly bear) Abundant					

OMINECA BIOPHYSICAL MAP LEGEND

Moderate	Altai fescue mountain hair-grass alpine bluegrass arctic bluegrass (Sitka valerian) *Cetraria* spp.	Altai fescue mountain hair-grass alpine bluegrass arctic bluegrass (Sitka valerian) *Cetraria* spp.	Altai fescue mountain hair-grass alpine bluegrass arctic bluegrass (Sitka valerian) *Cetraria* spp.	Altai fescue mountain hair-grass alpine bluegrass arctic bluegrass (Sitka valerian) *Cetraria* spp.	Altai fescue mountain hair-grass alpine bluegrass arctic bluegrass (Sitka valerian) *Cetraria* spp.
Comments: Little successional variation from shrub-herb phase to forested phases; parkland sites at lower elevations have a more closed canopy and a higher component of Engelmann spruce; moister sites have lower covers of dwarf shrubs & lichens and higher diversity & cover of herbs.					

ESSFmvp3
FCp - Subalpine fir - crowberry parkland ridge habitat class
xeric to subxeric, rocky ridgetops at parkland elevations; dry, shedding sites with shallow morainal or colluvial veneer over rock; a mosaic of clumps of stunted trees and openings with dwarf shrubs and lichens.

Map Symbol	FCp1	FCp2	FCp3	FCp4	FCp5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forest	Mature Forest	Old-growth
Dominants	dwarf shrub dominated cover of crowberry dwarf blueberry *Cladonia* spp. crustose lichens	open stand of subalpine fir crowberry dwarf blueberry *Cladonia* spp. crustose lichens	parkland forest of subalpine fir Engelmann spruce crowberry *Stereocaulon* spp. *Cladina* spp. crustose lichens	parkland forest of subalpine fir Engelmann spruce crowberry *Stereocaulon* spp. *Cladina* spp. crustose lichens	parkland forest of subalpine fir Engelmann spruce crowberry *Stereocaulon* spp. *Cladina* spp. crustose lichens
Associates	mountain-heathers mountain sage Altai fescue kinnikinnick	Engelmann spruce lodgepole pine mountain-heathers mountain sage Altai fescue kinnikinnick	lodgepole pine common juniper mountain-heathers dwarf blueberry kinnikinnick mountain sage *Dicranum* spp. *Cladonia* spp.	lodgepole pine common juniper mountain-heathers dwarf blueberry kinnikinnick mountain sage *Dicranum* spp. *Cladonia* spp.	lodgepole pine common juniper mountain-heathers dwarf blueberry kinnikinnick mountain sage *Dicranum* spp. *Cladonia* spp.
Potential Forage for wild ungulates Abundant			*Stereocaulon* spp. *Cladina* spp.	*Stereocaulon* spp. *Cladina* spp.	*Stereocaulon* spp. *Cladina* spp.
Moderate	Altai fescue alpine bluegrass arctic bluegrass	Altai fescue alpine bluegrass arctic bluegrass	Altai fescue alpine bluegrass arctic bluegrass *Cetraria* spp.	Altai fescue alpine bluegrass arctic bluegrass *Cetraria* spp.	Altai fescue alpine bluegrass arctic bluegrass *Cetraria* spp.
Comments: Little successional variation in species composition.					

ESSFmvp3
WCc - Willow - cow-parsnip avalanche chute cool aspect habitat class
mesic to subhygric sites on colluvial blankets and fans of active avalanche chutes on northwest to east facing slopes; sites are shrub dominated with herbaceous openings.

Map Symbol	WCc1
Characteristic plant species	
Dominants	shrub dominated cover (with herbaceous openings) of willows Sitka alder bluejoint cow-parsnip mountain monkshood
Associates	Engelmann spruce northern black currant trailing raspberry fireweed arrow-leaved ragwort Sitka valerian sedges *Mnium* spp.
Potential Forage for wild ungulates/(grizzly bear) Abundant	willows bluejoint (cow-parsnip)
Moderate	(northern black currant) (fireweed) (arrow-leaved ragwort) (Sitka valerian) (sedges)
Comments: This habitat unit was not sampled in the study area. The vegetation list is derived from Clement, C. 1990. "Biophysical Habitat Units of the Ospika River Drainage." Fletcher Challenge Canada Ltd., Woodland Division, MacKenzie. Avalanche chutes provide spring and summer habitat for grizzly bears.	

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmvp3
WCw - Willow - cow-parsnip avalanche chute warm aspect habitat class
mesic to subhygric sites on colluvial blankets and fans of active avalanche chutes on southeast to west facing slopes; sites are shrub dominated with herbaceous openings.

Map Symbol	WCw1
Characteristic plant species	
Dominants	shrub dominated cover (with herbaceous openings) of willows Sitka alder bluejoint cow-parsnip mountain monkshood
Associates	Engelmann spruce northern black currant trailing raspberry fireweed arrow-leavedragwort Sitka valerian sedges *Mnium* spp.
Potential Forage for wild ungulates/(grizzly bear) Abundant	willows bluejoint (cow-parsnip)
Moderate	(northern black currant) (fireweed) (arrow-leavedragwort) (Sitka valerian) (sedges)
Comments: This habitat unit was not sampled in the study area. The vegetation list is derived from Clement, C. 1990. "Biophysical Habitat Units of the Ospika River Drainage." Fletcher Challenge Canada Ltd., Woodland Division, MacKenzie. Avalanche chutes provide spring and summer habitat for grizzly bears.	

ESSFmvp3
FV - Subalpine fir - Sitka valerian moist parkland habitat class
subhygric sites on gentle to moderate slopes; moisture receiving sites underlain by morainal or (colluvial) blankets; a mosaic of clumps of stunted subalpine fir and moist subalpine meadows.

Map Symbol	FV1	FV2	FV3	FV4	FV5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forest	Mature Forest	Old-Growth
Dominants	forb dominated cover of willow Sitka valerian subalpine daisy mountain arnica arrow-leaved ragwort Indian hellebore	open stand of subalpine fir willow Sitka valerian subalpine daisy mountain arnica arrow-leaved ragwort Indian hellebore	parkland forest of subalpine fir Engelmann spruce Sitka valerian arrow-leaved ragwort mountain arnica subalpine daisy Indian hellebore	parkland forest of subalpine fir Engelmann spruce Sitka valerian arrow-leaved ragwort mountain arnica subalpine daisy Indian hellebore	parkland forest of subalpine fir Engelmann spruce Sitka valerian arrow-leaved ragwort mountain arnica subalpine daisy Indian hellebore
Associates	black huckleberry oakfern one-leaved foamflower mountain-heathers small-flowered woodrush *Brachythecium* spp.	Engelmann spruce black huckleberry oakfern one-leaved foamflower mountain-heathers small-flowered woodrush *Brachythecium* spp.	willow black huckleberry oakfern one-leaved foamflower mountain-heathers small-flowered woodrush *Brachythecium* spp.	willow black huckleberry oakfern one-leaved foamflower mountain-heathers small-flowered woodrush *Brachythecium* spp.	willow black huckleberry oakfern one-leaved foamflower mountain-heathers small-flowered woodrush *Brachythecium* spp.
Potential Forage for wild ungulates/(grizzly bear) Abundant	willow (Sitka valerian) (arrow-leaved ragwort) (Indian hellebore)	willow (Sitka valerian) (arrow-leaved ragwort) (Indian hellebore)	(Sitka valerian) (arrow-leaved ragwort) (Indian hellebore)	(Sitka valerian) (arrow-leaved ragwort) (Indian hellebore)	(Sitka valerian) (arrow-leaved ragwort) (Indian hellebore)
Moderate	(black huckleberry) mountain hair-grass fowl bluegrass alpine timothy (purple sweet-cicely) (sedges)	(black huckleberry) mountain hair-grass fowl bluegrass alpine timothy (purple sweet-cicely) (sedges)	(black huckleberry) mountain hair-grass fowl bluegrass alpine timothy (purple sweet-cicely) (sedges)	(black huckleberry) mountain hair-grass fowl bluegrass alpine timothy (purple sweet-cicely) (sedges)	(black huckleberry) mountain hair-grass fowl bluegrass alpine timothy (purple sweet-cicely) (sedges)
Comments: This class has similar vegetation to the Sitka valerian - arrow-leaved ragwort moist meadow habitat class.					

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmvp3
FVc - Subalpine fir - Sitka valerian moist parkland, cool aspect
subhygric sites on steep slopes with cool aspects; moisture receiving sites underlain by morainal or (colluvial) blankets; a mosaic of clumps of stunted subalpine fir and moist subalpine meadows.

Map Symbol	FVc1	FVC2	FVc3	FVc4	FVc5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forest	*Mature* Forest	Old-Growth
Dominants	forb dominated cover of willow Sitka valerian subalpine daisy mountain arnica arrow-leaved ragwort Indian hellebore	open stand of subalpine fir willow Sitka valerian subalpine daisy mountain arnica arrow-leaved ragwort Indian hellebore	parkland forest of subalpine fir Engelmann spruce Sitka valerian arrow-leaved ragwort mountain arnica subalpine daisy Indian hellebore	parkland forest of subalpine fir Engelmann spruce Sitka valerian arrow-leaved ragwort mountain arnica subalpine daisy Indian hellebore	parkland forest of subalpine fir Engelmann spruce Sitka valerian arrow-leaved ragwort mountain arnica subalpine daisy Indian hellebore
Associates	black huckleberry oakfern one-leaved foamflower mountain-heathers small-flowered woodrush *Brachythecium* spp.	Engelmann spruce black huckleberry oakfern one-leaved foamflower mountain-heathers small-flowered woodrush *Brachythecium* spp.	willow black huckleberry oakfern one-leaved foamflower mountain-heathers small-flowered woodrush *Brachythecium* spp.	willow black huckleberry oakfern one-leaved foamflower mountain-heathers small-flowered woodrush *Brachythecium* spp.	willow black huckleberry oakfern one-leaved foamflower mountain-heathers small-flowered woodrush *Brachythecium* spp.
Potential Forage for wild ungulates/(grizzly bear) Abundant	willow (Sitka valerian) (arrow-leavedragwort) (Indian hellebore)	willow (Sitka valerian) (arrow-leavedragwort) (Indian hellebore)	(Sitka valerian) (arrow-leavedragwort) (Indian hellebore)	(Sitka valerian) (arrow-leavedragwort) (Indian hellebore)	(Sitka valerian) (arrow-leavedragwort) (Indian hellebore)

Moderate	(black huckleberry) mountain hair-grass fowl bluegrass alpine timothy (purple sweet-cicely) (sedges)	(black huckleberry) mountain hair-grass fowl bluegrass alpine timothy (purple sweet-cicely) (sedges)	(black huckleberry) mountain hair-grass fowl bluegrass alpine timothy (purple sweet-cicely) (sedges)	(black huckleberry) mountain hair-grass fowl bluegrass alpine timothy (purple sweet-cicely) (sedges)	(black huckleberry) mountain hair-grass fowl bluegrass alpine timothy (purple sweet-cicely) (sedges)
Comments: This class has similar vegetation to the Sitka valerian - arrow-leaved ragwort moist meadow habitat class.					

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmvp3
FVw - Subalpine fir - Sitka valerian moist parkland, warm aspect
subhygric sites on steep slopes with warm aspects; moisture receiving sites underlain by morainal or (colluvial) blankets; a mosaic of clumps of stunted subalpine fir and moist subalpine meadows.

Map Symbol	*FVw1*	FVw2	FVw3	FVw4	FVw5
Characteristic plant species	Shrub-herb	Pole-Sapling	Young Forest	Mature Forest	Old-Growth
Dominants	forb dominated cover of willow Sitka valerian subalpine daisy mountain arnica arrow-leaved ragwort Indian hellebore	open stand of subalpine fir willow Sitka valerian subalpine daisy mountain arnica arrow-leaved ragwort Indian hellebore	parkland forest of subalpine fir Engelmann spruce Sitka valerian arrow-leaved ragwort mountain arnica subalpine daisy Indian hellebore	parkland forest of subalpine fir Engelmann spruce Sitka valerian arrow-leaved ragwort mountain arnica subalpine daisy Indian hellebore	parkland forest of subalpine fir Engelmann spruce Sitka valerian arrow-leaved ragwort mountain arnica subalpine daisy Indian hellebore
Associates	black huckleberry oakfern one-leaved foamflower mountain-heathers small-flowered woodrush *Brachythecium* spp.	Engelmann spruce black huckleberry oakfern one-leaved foamflower mountain-heathers small-flowered woodrush *Brachythecium* spp.	willow black huckleberry oakfern one-leaved foamflower mountain-heathers small-flowered woodrush *Brachythecium* spp.	willow black huckleberry oakfern one-leaved foamflower mountain-heathers small-flowered woodrush *Brachythecium* spp.	willow black huckleberry oakfern one-leaved foamflower mountain-heathers small-flowered woodrush *Brachythecium* spp.
Potential Forage for wild ungulates/(grizzly bear) Abundant	willow (Sitka valerian) (arrow-leaved ragwort) (Indian hellebore)	willow (Sitka valerian) (arrow-leaved ragwort) (Indian hellebore)	(Sitka valerian) (arrow-leaved ragwort) (Indian hellebore)	(Sitka valerian) (arrow-leaved ragwort) (Indian hellebore)	(Sitka valerian) (arrow-leaved ragwort) (Indian hellebore)

Moderate	(black huckleberry) mountain hair-grass fowl bluegrass alpine timothy (purple sweet-cicely) (sedges)	(black huckleberry) mountain hair-grass fowl bluegrass alpine timothy (purple sweet-cicely) (sedges)	(black huckleberry) mountain hair-grass fowl bluegrass alpine timothy (purple sweet-cicely) (sedges)	(black huckleberry) mountain hair-grass fowl bluegrass alpine timothy (purple sweet-cicely) (sedges)	(black huckleberry) mountain hair-grass fowl bluegrass alpine timothy (purple sweet-cicely) (sedges)
Comments: This class has similar vegetation to the Sitka valerian - arrow-leaved ragwort moist meadow habitat class.					

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmvp3
VR - Sitka valerian - arrow-leaved ragwort moist meadow habitat class
subhygric sites in gentle to moderate slope positions underlain by morainal, fluvial or colluvial blankets; rich, herbaceous unit with a diversity of plant species in moist meadows.

Map Symbol	VR1
Characteristic plant species	
Dominants	lush forb meadow of Sitka valerian arrow-leaved ragwort subalpine daisy mountain arnica Indian hellebore *Brachythecium* spp. *Mnium* spp.
Associates	subalpine fir willow mountain monkshood mountain hair-grass white marsh-marigold Sitka burnet
Potential Forage for wild ungulates/(grizzly bear) Abundant	(Sitka valerian) (arrow-leaved ragwort) (Indian hellebore)
Moderate	mountain hair-grass alpine timothy fowl bluegrass bluejoint (sedges) (purple sweet-cicely) (cow-parsnip)
Comments: This habitat class provides summer forage for grizzly bears.	

OMINECA BIOPHYSICAL MAP LEGEND

ESSFmvp3
WS - Willow - sedge wetland habitat class
hygric to subhygric, gently sloping to level sites in depressional landscape; herbaceous, sedge dominated wetlands on organic blankets or veneers over fine-textured parent materials.

Map Symbol	
Characteristic plant species	
Dominants	herb and moss dominated cover of sedges leatherleaf saxifrage Sitka burnet white marsh marigold *Aulacomnium palustre* *Sphagnum* spp. *Calliergon* spp.
Associates	willows mountain hairgrass cotton-grass bog-orchids arrow-leaved ragwort *Tomenthypnum nitens* *Drepanocladus* spp. *Paludella squarrosa*
Potential Forage for wild ungulates/(grizzly bear) Abundant	(sedges)
Moderate	willows mountain hairgrass bluejoint (arrow-leaved ragwort)
Comments: Limited occurrence in the parkland.	

OMINECA BIOPHYSICAL MAP LEGEND

ATn
FW - Altai Fescue - dwarf willow tundra habitat class
Submesic to mesic sites on gentle to moderate slopes. Turfy, hummocky, typical alpine tundra with relatively deep soils.

Map Symbol	*FW*
Characteristic plant species	*gentle* slopes to flat topography
Dominants	grass dominated cover of Altai fescue mountain sage dwarf willows moss campion mountain-heathers *Polytrichum* spp. crustose lichens
Associates	sedges curved alpine woodrush alpine bistort pussytoes purple reedgrass *Stereocaulon* spp. *Cetraria* spp. *Cladina* spp.
Potential Forage for wild ungulates Abundant	Altai fescue
Moderate	purple reedgrass alpine bluegrass arctic bluegrass alpine fescue fuzzy-spiked wildrye alpine timothy *Stereocaulon* spp. *Cetraria* spp. *Cladina* spp.
Comments: The habitat class includes the BEC "dwarf willow - sedge - grass - cryptogam" tundra zonal ecosystem, "alpine heath" and the "Altai fescue - lichen tundra" ecosystem (MacKinnon et al. 1990). In the study area, dwarf willows were often observed to be an associate species in this class. Entire-leaved white mountain-avens is associated with calcareous parent material. Scrub birch may be an associate species on upper colluvial slopes at low to moderate elevations of the alpine tundra zone.	

ATn
FWc - Altai Fescue - dwarf willow tundra cool aspect habitat class
Submesic to mesic sites on moderate to steep, northwest to east facing slopes.
Turfy, hummocky, typical alpine tundra with relatively deep soils.

Map Symbol	*FWc*
Characteristic plant species	cool (snow accumulation) aspects
Dominants	grass/heath dominated cover of Altai fescue sedges curved alpine woodrush mountain-heathers moss campion crustose lichens
Associates	dwarf willows mountain sage sibbaldia pussytoes red bearberry *Dicranum* sp. *Polytrichum piliferum* *Stereocaulon* spp.
Potential Forage for wild ungulates Abundant	Altai fescue
Moderate	alpine bluegrass arctic bluegrass fuzzy-spiked wildrye *Stereocaulon* spp. *Cetraria* spp.

Comments: The habitat class includes the BEC "dwarf willow - sedge - grass - cryptogam" tundra zonal ecosystem, "alpine heath" and the "Altai fescue - lichen tundra" ecosystem (MacKinnon et al, 1990). In the study area, dwarf willows were often observed to be an associate species in this class. Entire-leaved white mountain-avens is associated with calcareous parent material. Scrub birch may be an associate species on upper colluvial slopes at low to moderate elevations of the alpine tundra zone. Four-angled and white mountain heather species may dominate on cool (snow accumulation) sites.

ATn

FWw - Altai Fescue - dwarf willow tundra warm aspect habitat class

Submesic to mesic sites on moderate to steep, southeast to west facing slopes. Turfy, hummocky, typical alpine tundra with relatively deep soils.

Map Symbol	FWw
Characteristic plant species	warm (light snow covered) aspects
Dominants	grass dominated cover of Altai fescue mountain sage leaf lichens crustose lichens
Associates	sedges northern goldenrod northern selaginella mountain monkshood cinquefoils louseworts pussytoes *Polytrichum piliferum* *Stereocaulon* spp. *Cladina* spp.
Potential Forage for wild ungulates Abundant	Altai fescue
Moderate	alpine bluegrass arctic bluegrass alpine fescue fuzzy-spiked wildrye purple reedgrass alpine timothy *Stereocaulon* spp. *Cladina* spp. *Cetraria* spp.
Comments: The habitat class includes the BEC "dwarf willow - sedge - grass - cryptogam" tundra zonal ecosystem, "alpine heath" and the "Altai fescue - lichen tundra" ecosystem (MacKinnon et al, 1990). In the study area, dwarf willows were often observed to be an associate species in this class. Entire-leaved white mountain-evens is associated with calcareous parent material. Scrub birch may be an associate species on upper colluvial slopes at low to moderate elevations of the alpine tundra zone.	

ATn

FK - Subalpine fir krummholz habitat class

submesic to mesic sites on gentle to moderate slopes at lower elevations of the alpine tundra zone; morainal and colluvial veneers & (blankets) over rock; dominant low subalpine fir continuous cover in mosaic with alpine heath & meadows.

Map Symbol	FK
Characteristic plant species	
Dominants	shrub cover of subalpine fir mountain-heathers Altai fescue mountain sage crustose lichens *Polytrichum* spp.
Associates	willows scrub birch crowberry dwarf blueberry subalpine daisy mountain monkshood sedges *Dicranum* spp.
Potential Forage for wild ungulates Abundant	Altai fescue
Moderate	willows alpine bluegrass arctic bluegrass alpine timothy fuzzy-spiked wildrye *Cladina* spp. *Stereocaulon* spp. *Cetraria* spp.
Comments: This habitat class occupies sites within a transitional zone between subalpine forests or parkland and alpine tundra and consequently contains species common to both subalpine and alpine units. This class may include extensive heath lands. Entire-leaved white mountain-avens may be an associate species on calcareous soils. This unit is now considered a parkland ecosystem.	

ATn
FKc - Subalpine fir krummholz cool aspect habitat class
submesic to mesic sites on steep slopes with cool aspects at lower elevations of the alpine tundra zone; morainal and colluvial veneers & (blankets) over rock; dominant low subalpine fir continuous cover in mosaic with alpine heath & meadows.

Map Symbol	FKc
Characteristic plant species	
Dominants	shrub cover of subalpine fir mountain-heathers Altai fescue mountain sage crustose lichens *Polytrichum* spp.
Associates	willows scrub birch crowberry dwarf blueberry subalpine daisy mountain monkshood sedges *Dicranum* spp.
Potential Forage for wild ungulates Abundant	Altai fescue
Moderate	willows alpine bluegrass arctic bluegrass alpine timothy fuzzy-spiked wildrye *Cladina* spp. *Stereocaulon* spp. *Cetraria* spp.
Comments: This habitat class occupies sites within a transitional zone between subalpine forests or parkland and alpine tundra and consequently contains species common to both subalpine and alpine units; mountain-heathers may dominate on cool aspect sites. This class may include extensive heath lands. Entire-leaved white mountain-avens may be an associate species on calcareous soils. This unit is now considered a parkland ecosystem.	

ATn
FKw - Subalpine fir krummholz warm aspect habitat class
submesic to mesic sites on steep slopes with warm aspects at lower elevations of the alpine tundra zone; morainal and colluvial veneers & (blankets) over rock; dominant low subalpine fir continuous cover in mosaic with alpine heath & meadows.

Map Symbol	FKw
Characteristic plant species	
Dominants	shrub cover of subalpine fir mountain-heathers Altai fescue mountain sage crustose lichens *Polytrichum* spp.
Associates	willows scrub birch crowberry dwarf blueberry subalpine daisy mountain monkshood sedges *Dicranum* spp.
Potential Forage for wild ungulates Abundant	Altai fescue
Moderate	willows alpine bluegrass arctic bluegrass alpine timothy fuzzy-spiked wildrye *Cladina* spp. *Stereocaulon* spp. *Cetraria* spp.

Comments: This habitat class occupies sites within a transitional zone between subalpine forests or parkland and alpine tundra and consequently contains species common to both subalpine and alpine units; Altai fescue and mountain sage may dominant on warm slopes. This class may include extensive heath lands. Entire-leaved white mountain-avens may be an associate species on calcareous soils. This unit *is* now considered a parkland ecosystem.

OMINECA BIOPHYSICAL MAP LEGEND

ATn

CFc - Cryptogam - Altai fescue very shallow soil, cool aspect habitat class

xeric to subxeric sites on steep, rugged terrain with northwest to east aspects; very shallow (<20cm), rubbly, colluvial veneer over rock; sparse vegetation restricted to pockets of soil among outcrops and in rock crevices.

Map Symbol	CFc
Characteristic plant species	
Dominants	lichen dominated cover of *Umbilicaria* spp. (leaf lichens) *Cetraria* spp. *Cladina* spp. Altai fescue mountain sage
Associates	curved alpine woodrush bluejoint moss campion arctic bluegrass *Hylocomium splendens* *Rhacomitrium lanuginosum* *Polytrichum piliferum* *Stereocaulon* spp.
Potential Forage for wild ungulates	*Cetraria* spp. *Cladina* spp.
Abundant	Altai fescue
Moderate	bluejoint arctic bluegrass purple reedgrass fuzzy-spiked wildrye *Stereocaulon* spp.
Comments: Altai fescue may become less dominant at high elevations.	

ATn

CFw - Cryptogam - Altai fescue very shallow soil, warm aspect habitat class

xeric to subxeric sites on steep, rugged terrain with southeast to west aspects; very shallow (<20cm), rubbly, colluvial veneer over rock; sparse vegetation restricted to pockets of soil among outcrops and in rock crevices.

Map Symbol	CFw
Characteristic plant species	
Dominants	lichen dominated cover of *Umbilicaria* spp. (leaf lichens) *Cetraria* spp. *Cladina* spp. Altai fescue mountain sage
Associates	moss campion arctic bluegrass three-toothed saxifrage one-headedpussytoes *Rhacomitrium lanuginosum* *Polytrichum piliferum* *Stereocaulon* spp.
Potential Forage for wild ungulates Abundant	*Cetraria* spp. *Cladina* spp. Altai fescue
Moderate	arctic bluegrass purple reedgrass fuzzy-spiked wildrye *Stereocaulon* spp.
Comments: Altai fescue may become less dominant at high elevations.	

ATn
WM - Dwarf willow - entire-leaved white mountain-avens ridge habitat class
Xeric to subxeric sites in wind exposed positions, typically on crests, upper slopes and rounded ridgetops; level to moderate slopes on colluvial and morainal veneer over rock; high percentage of exposed stones and frost action.

Map Symbol	*WM*
Characteristic plant species	
Dominants	dwarf shrub/grass dominated cover of entire-leaved white mountain-avens bog blueberry Altai fescue mountain sage *Stereocaulon* spp. *Cetraria* spp. *Polytrichum piliferum*
Associates	scrub birch dwarf willows moss campion sedges purple reedgrass one-headed pussytoes *Umbilicaria* spp. (leaf lichens) crustose lichens
Potential Forage for wild ungulates Abundant	Altai fescue *Stereocaulon* spp. *Cetraria* spp.
Moderate	purple reedgrass alpine fescue alpine bluegrass arctic bluegrass bluejoint *Cladina* spp.
Comments: Habitat unit corresponds to the "cushion plant" tundra of BEC (MacKinnon et al. 1990). Scrub birch may be a dominant species on upper colluvial slopes at low to mid alpine elevations. Dwarf willows were observed to be associate species.	

OMINECA BIOPHYSICAL MAP LEGEND

ATn
VR - Sitka Valerian - arrow-leaved ragwort moist meadow habitat class
herbaceous, moist meadows on subhygric sites typically in alpine bowls or cirques; moderate to steep slopes on colluvial blankets; minor avalanching.

Map Symbol	*VR*
Characteristic plant species	
Dominants	Sitka valerian arrow-leaved ragwort subalpine daisy sedges
Associates	willow alpine timothy mountain hairgrass mountain monkshood Indian hellebore subalpine buttercup Sitka burnet white marsh-marigold
Potential Forage for wild ungulates/(grizzly bear) Abundant	(Sitka valerian) (arrow-leaved ragwort) (sedges)
Moderate	willow alpine timothy mountain hairgrass Altai fescue bluejoint (Indian hellebore)
Comments: This unit was not sampled in the alpine tundra zone within the study area. Vegetation lists derived from Clements, C. et al, 1990. Biophysical Inventory of the Ospika River Drainage. Fletcher Challenge Canada Ltd., Woodland Division, MacKenzie.	

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